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*See pp. 19, 21, 22, 24, 26, 139, 141, 143 for catalogs and publications on municipal and civic subjects*

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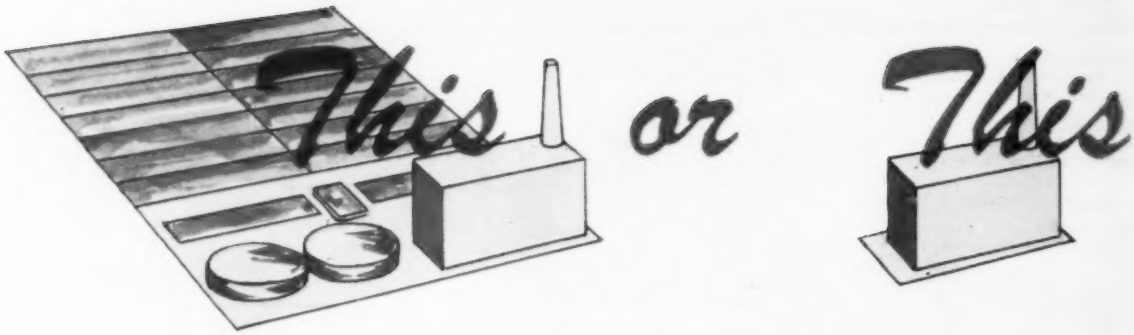


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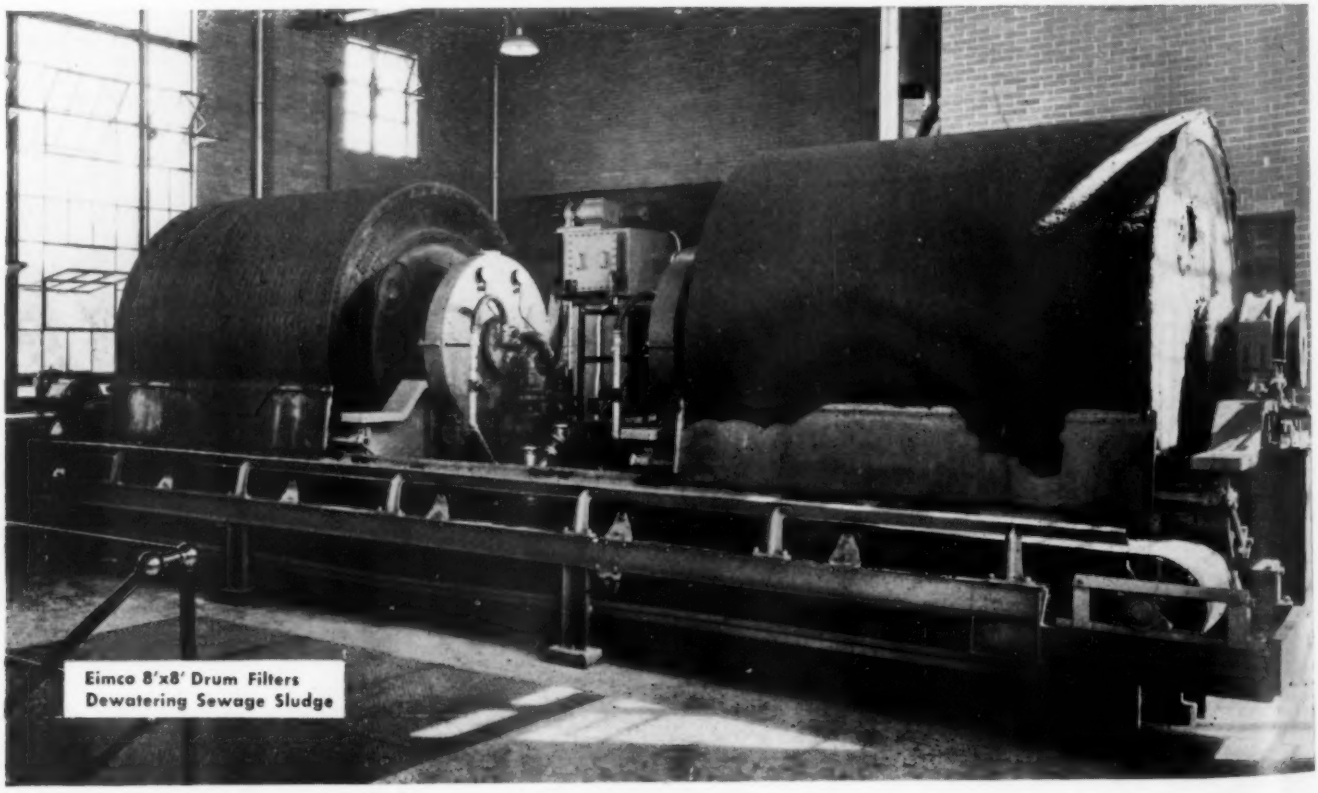

Eimco 8'x8' Drum Filters Dewatering Sewage Sludge

# Labor Unions and Municipal Employe Law

A SURVEY of 400 of the largest municipalities in the nation conducted by Charles S. Rhyne, has uncovered only seven agreements between these municipalities and labor unions. These are in the cities of Baltimore (AFL Teamsters Union covering garbage collectors, street cleaners, and public employes only), Philadelphia (AFL, covering garbage collectors, street cleaners, and public employes only), Reading, Pa. (AFL unions—all employes), Fairmont, W. Va. (United Mine Workers, District 50—covering all employes), Oak Park, Ill. (Teamsters Union, covering garbage collectors), Chattanooga (Electrical Workers Union, covering Power Board employes only), and Seattle (Motor Coach Employes Union, covering transit workers only).

In Detroit (covering transit workers only), Cleveland (covering transit workers only), Bloomington, Flint and Pontiac (the latter 3 covering nearly all employes), ordinances or rules and regulations have been adopted covering working conditions of city employes. These ordinances or rules and regulations are issued solely by these cities and are not signed by the union, so cannot be considered as union agreements or contracts.

### Conclusions Summarized

The results of this survey and a mass of other data concerning Labor Unions and Municipal Employe Law are presented in a 583-page book with that title by Mr. Rhyne, published May 31, 1946, by the National Institute of Municipal Law Officers, of which the author is General Counsel.*

The chief conclusions of the book may be summarized as follows:

1. Municipal employes may organize or join unions except where the nature of their employment is incompatible with public duties (policemen, for example).
2. Signing of contracts delegating municipal powers to labor unions, or the granting of undue preferences to unions is considered illegal.
3. Collective bargaining in its private industry sense cannot be transplanted into the public service.
4. Agreements resulting in conflict with Civil Service or other laws are illegal.
5. The closed shop is illegal in public employment.
6. The check-off device is generally regarded as an unlawful preference in favor of the union and illegal.
7. Arbitration agreements constitute an improper delegation of municipal legal authority.
8. No right to strike exists for governmental employes.
9. Picketing which prevents or interferes with the carrying out of the city's functions is illegal.
10. The exercise of a "governmental" or a "proprietary" function in the utility field does not affect the right or the disability to enter into a labor union contract with a union of municipal employes.

Historically, any consideration of labor unions and municipalities dates back to the famous strike of Boston police in 1919, when Calvin Coolidge made his famous statement that "There is no right to strike against the public safety by anybody, anywhere, at any time."

Perhaps the most famous pronouncement in the public employe labor union field since Coolidge's statement is that of the late President Roosevelt when he said in part: "All government employes should realize that the process of collective bargaining, as usually understood, cannot be transplanted into the public service. . . . A strike of public employes . . . looking toward the paralysis of government by those who have sworn to support it, is unthinkable and intolerable."

* See page 139 of this issue.

# The Community's Responsibility to the Veteran

*From an address by Major General Graves B. Erskine, "Reintegration of the Veteran into the Community," before the 1946 Annual Meeting of the Chamber of Commerce of the United States.**

THE problem of reintegrating the veteran into the community is national in scope, but it cannot be solved at the top. It must be solved on the community level—back home where men and women live and work. The reintegration of the veteran into civilian life is a job *for* and *by* the community. It is a job of community education, community organization, and community planning. It will be accomplished only by the united awareness, the united determination, and good hard work on the part of every citizen in the community.

All of the surveys and reports by government officials, all of the planning by federal agencies, all of the law-making and bill-passing of our legislators in their efforts to help the veteran will be of little use unless the heart and mind of the communities become concerned with the reintegration of their veterans and of all citizens whose lives have become disrupted by war.

The greatest need is for the community to have an overall program which will tackle all phases of the problem of reintegration, considering the problems of the non-veterans and war workers who have lost their jobs because of reconversion, as well as those of the returning veteran.

### Preference for Veterans

Preference, of course, must be given to the veteran in this over-all planning. The unemployment rate for veterans is now four times as high as that for non-veterans.

One of the first and most important steps a community can take is to organize and establish an Advisory Center where all resources and services within the community can be placed at the disposal of the veteran. Here, at this one location the veteran should be able to obtain complete and authoritative information, counsel, guidance, and the individual assistance needed in solving his personal problems.

No one group should selfishly claim the Center as its own brainchild or advertise it as a monument to its own civic pride. Democratically constituted and free from domination by any single interest, the Advisory Center will offer an opportunity for every organization and individual to make the maximum contribution without duplication of effort. To the returning veteran, they will offer conclusive proof of the community's welcome to him and of its wholehearted desire to be of practical assistance.

* The full text of Major General Erskine's address is obtainable in mimeographed form from the Construction and Civic Development Department of the Chamber of Commerce of the United States, Washington, D. C.

# In some places it takes a whole new building

We've added a good many telephones in the last six months—something over 1,800,000.

But there's more than that still to be done. In addition to the instruments, we're putting in new switchboards, new cables, even new buildings in some places. For there never was such telephone growth before.

It's the biggest job the Bell System has ever had. But we'll get it done, and in the shortest time possible. We don't like to keep people waiting for telephone service.

BELL TELEPHONE SYSTEM

# Our Municipal Notebook

## *City Planning Programs Guide the Transit Industry*

THE TRANSIT industry has a great stake and interest in sound city planning, according to the consensus among city planners queried recently by the American Transit Association.

Many cities are preparing a master plan for the orderly development of their urban areas and are presenting this plan in the form of maps, charts and land use directives. A well-conceived master plan shows, among other things: desirable streets, highways and traffic terminals, parks and parkways, sites for public buildings, land use and building zone control districts, routes of public utilities privately and publicly owned, routes of railroads and surface transit services—all with future changes and improvements, thus enabling the transit operator to predetermine future transit loads and program the development and modernization of a transit system with greater certainty.

Through the use of such a master plan, the transit operator can determine the location and development of the buildings, structures and other fixed facilities which are required for the successful operation of business and which involve large capital expenditures.

City planning aims to control the expansion of unwholesome conditions and retards decentralization through urban redevelopment, rezoning, land subdivision control and other planning means. Such measures stabilize neighborhood values and also the demand for transit service.

The transit industry is modernizing its equipment, and companies throughout the country are contemplating improved routings and services. All these relate to the distribution of land uses and urban population, both of which form part of the basis for the master plan of a community. It is to the advantage of local transit companies to ally themselves with local and national planning associations and to assume active leadership.

## Municipalities in the News

Atlantic City Wins Garbage Appeal
Special to the World-Telegram.
TRENTON, June 5.—The State Supreme Court today sustained the Atlantic City Commission in awarding its 1946 garbage collection contract to Lawrence B. Haines of Westville, high bidder. The court held that John and Henry Sandfort, low bidders who contested the award, did not do a good job last year. The court said that such conditions as these existed in the "world's playground" last year:
"In many parts of the city the garbage was uncollected. Householders burned it in shallow pits. Some took it to the dump. It was dumped in the thoroughfares and basins around the town. The city was overrun with maggots, vermin and rats, due to the non-collection of garbage."
Lightning Starts Alarm, Then Fire
By the Associated Press.
JAMESTOWN, N. Y., June 1.—A bolt of lightning struck the siren of the fire hall in the nearby hamlet of Fluvanna during a thunderstorm last night and the siren sounded, summoning members of the volunteer fire company.
The Jamestown Fire Department, called by the company to help put out a blaze which followed the lightning strike, reported the siren was silenced only after flames had burned through the wiring. Fire Chief Charles A. Sondell of the Fluvanna company estimated damage to the hall at between $10,000 and $15,000.
First Arrest Made For Selling Caps
The Police Department drive for a safe and noiseless Independence Day resulted yesterday in what was believed to be the campaign's first arrest when Mrs. Florence Cooper, owner of a gift shop at 2618 Church Ave., Bklyn., was booked on a charge of having sold caps for toy pistols. She was released in Flatbush Magistrates Court for a hearing Monday.
Few at first realized the seriousness of the fire, despite smoke pouring from windows.
Fire Department investigators found that the fire apparently started in an elevator shaft below the street level. They believed it started in a single cable beneath an elevator car.
John Fenn, deputy fire marshal, disclosed that he had sent hotel officials a list of 10 violations of city fire prevention ordinances May 10. He said the violations had not been corrected. Whether any contributed to the fire he declined to say.

*Phases of municipal activities are reflected in the clippings above from the New York World-Telegram. The fire referred to in the clipping on the lower right is the Chicago hotel fire of early June.*

## *Boys' Clubs Important in Delinquency Control*

BOYS' CLUBS are an important factor in delinquency control, according to Municipal Court Judge Nochem S. Winnet of Philadelphia.

During the first year of operation, the Referral System of the Philadelphia Crime Prevention Association, known as the "Philadelphia Plan," brought 798 of 1,400 boys charged with delinquency into the various boys' clubs, reducing recidivism more than 50%.

The Crime Prevention Association acts as a clearing house for all cases of charged delinquency and receives from the police, schools, and other agencies cards for boys who have been charged with a delinquency or who have been the subject of a complaint. These cards are cleared through the Social Service Exchange to determine whether other agencies are active in the case. If no agency is, the case is referred to one of the Association's seven boys' clubs through a staff member of a committee of adults organized to aid with the plan. The boy's home is contacted and a special effort is made to have him join one of the clubs.

## *Scouts Aid in Survey*

WHEN Detroit, Mich., and Atlanta, Ga., surveyed their parking facilities recently, approximately 8,000 Boy Scouts took part in the work, 5,000 in Detroit and 3,000 in Atlanta.

Surveys in both cities were similar. Each curb space, parking lot, and garage in the entire downtown area was covered by uniformed Scouts, who obtained information on the time of arrival and departure of every vehicle parked in the area, the location and facility used for parking, and the driver's home address, downtown destination, and purpose in making the trip.

Parking in the central business district was surveyed in one day between 7 a.m. and 7 p.m. A single Scout covered approximately one-half block of curb parking, and from two to six boys were assigned to each parking lot and garage.

*2,000,000-gal. Horton Spheroidal Water Tank at Washington, D. C.*

## in elevated tank design

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Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

# Water Supply and Treatment

## *How Water Departments Are Managed*

IS THE WATER works man unselfish enough to select the type of management that is best for his community rather than for his department? This question was posed by Wendell R. LaDue, chief engineer and general superintendent of the Bureau of Water and Sewerage, Akron, Ohio, and new president of the American Water Works Association. Mr. LaDue spoke before the recent AWWA conference in St. Louis.

Many water works men object to any diversion of funds from their department. However, Mr. LaDue pointed out that some diversions may be desirable and legal, and may even protect a given rate structure from ridiculous cutting. Many officials tolerate an inefficient system of water supply organization arguing that they do not wish to change a system that works satisfactorily for them.

### Various Systems

There are various systems that water departments may follow depending upon state and local laws. The department may be responsible directly to the city council, however, this presents the difficulty of constantly changing personnel and consequently hinders inauguration of long-range programs. It may operate as a part of the city manager form of government. In this case, the water works is as good as the city manager is efficient. It may also operate under a water works board or commission in which the commissioners are appointed by the mayor and his council. The commission is independent and balanced politically. This encourages long-range, continuing policies, and evidence points to increasing confidence in its use.

Uniform top management, Mr. LaDue stated, is neither practical nor desirable. A water department will assist both itself and its community by good management of the best form obtainable.

## *Water Reports— Who Reads Them?*

KANSAS CITY, MO., is developing its water works reports so that they serve better at home, and in particular is attempting to eliminate full-page statements. This was emphasized by M. P. Hatcher, Director, Water Department, Kansas City, in a paper delivered before the American Water Works Association, national meeting held recently in St. Louis.

Analysis of the mailing lists for Kansas City reports show that 20% go to other municipal utilities; 16% to libraries and universities; 4% to consulting engineers; 15% to technical magazines; 10% to local organizations; 26% to consumers; and 9% to other miscellaneous groups. This means that the report reaches one in every 3,300 people within the city itself.

A water department report, Mr. Hatcher emphasized, cannot hope to be prepared in a manner that will make it suitable for overall general distribution. It is a professional report on a technical operation, and should be written on a standard as high as that used in the technical press. The department should be ready to cooperate with newspapers and other agencies that can carry the message to the people in general.

## *Baltimore Begins Patapsaco Project*

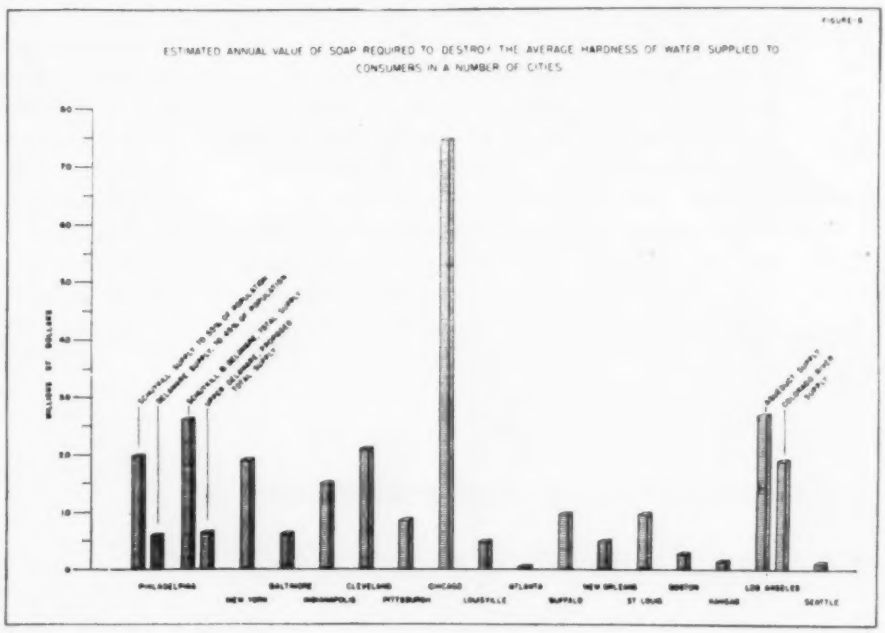
THE first step in a plan to tap the Patapsaco water supply was taken recently in Baltimore, Md., when a contract for a portion of the tunnel construction was awarded, according to Nathan L. Smith, chief engineer. This initial work consists of building shafts and headings for the tunnel proper.

The complete development of this project, including tunnel, pipe-line, dams, bridges, will extend over a twenty-year period and will cost approximately 32 million dollars. Baltimore's present water supply, comes from the Gunpowder Watershed, but the growth of the city has made it inadequate, particularly during prolonged dry spells.

## *How Much Does Hard Water Cost Your City?*

HOW DOES your community rate with other cities in the matter of costs of soap required annually to soften water? The accompanying chart was used by Sheppard Powell, Baltimore consulting engineer, in connection with his paper, "The Quality of Water and Its Value for Industrial and Domestic Uses," presented at the spring meeting of the American Society of Civil Engineers in the Bellevue-Stratford Hotel, Philadelphia recently.

In connection with this problem of "hard" water, Mr. Powell said: "These calculations have been based on the amount of soap required only to destroy the hardness present in the supply. The actual value of soap and other softening reagents used undoubtedly is many times as great as the figures reported.




*Showing the estimated annual dollar value of soap required to destroy the average hardness of water supplies.*

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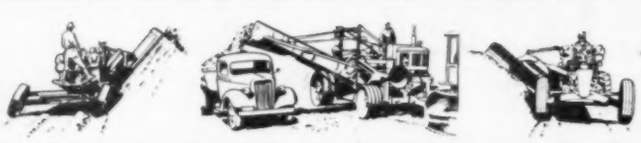


# ADAMS

**ROAD BUILDING AND EARTH-MOVING EQUIPMENT**

# Street Construction and Maintenance

## *Let's Look at Baltimore's Street Program*

LOOKING OVER Baltimore's street program, certain points present themselves which contrast with those found in other paving programs. (See Baltimore Renovates Its Streets on page 80 of this issue.)

As the article shows, Baltimore has no particular interest in reducing the strength of any of its pavements. Whereas such northern cities as Dearborn and Wyandotte, Mich., have adopted as standard a slab depth of 5 to 6 inches for residential areas and 7 inches for heavy traffic, Baltimore with its relatively moderate climate, uses a 7-inch slab for residences and 8 inches in the heavily traveled ways. Nor is Baltimore inclined to accept the use of any special grind or blend of cement. When high early strength is required, the Street Department obtains it by the admixture of calcium chloride. Chloride-resisting air-entraining cement has no particular interest to Baltimore, where ice rarely forms on the streets, especially since this blend results in slightly weaker concrete.

Stabilization of the subgrade further strengthens the pavement, and here Baltimore has taken another stand that illustrates differences of opinion between engineers. This stabilization is reinforced by the use of perforated pipe drains across the pavement at 50-foot intervals. Controversy over such drains has been so heated at times that Dean T. Agg of Iowa State College's Division of Engineering, and one of the country's prominent authorities in the road and street construction field once offered to personally drink all the water that flows out of them that would have any effect on subgrade stabilization. But Baltimore feels that they have value and uses them.

Expansion joint practice also shows a reluctance on the part of Baltimore engineers to use an expansion interval greater than 90 feet or a contraction interval of less than 30. Other cities have confidently lengthened the expansion joint interval to as much as 600 feet and have cut the contraction interval to 12 to 15 feet. This results in a much narrower joint that reduces the opportunity for the intrusion of incompressible material. Some have eliminated the load-transfer dowel bars. But Baltimore feels strongly that they have value.

Regarding its asphalt construction, the use of a portland cement filler to top off the wearing surface is another point that street construction engineers disagree over. Its purpose, to give a density to the wearing surface, has often been subordinated by contractors who have used the topping to cover inadequate and poorly constructed work. Improperly done, the filler tends to make the street dangerously slippery when wet. The Asphalt Institute generally discourages its use but Baltimore hestitates to drop a practice that apparently has been working well for her.

It will be good to contrast the experience Baltimore will have with its streets with those of other cities who have utilized these other money-saving methods.

## *Long Beach, Calif., Starts Bridge Building Program*

A REINFORCED concrete bridge over the Los Angeles River on Long Beach Boulevard constitutes the first of a series of three bridges which Long Beach proposes to build this year. Funds for this construction will be realized from the sale of bonds voted about eighteen months ago. The estimated cost of the bridge is slightly under $1,000,000.

According to City Manager S. E. Vickers and City Engineer George E. Baker, the two other bridges to be built will be located on Willow Street and Aresia Street over the Los Angeles River, and also over the Marine Stadium in the eastern part of the city. Both will be of reinforced concrete.

## *Snow Removal Contracted Between State and Cities*

NEW LEGISLATION recently passed in New York State places the obligation for snow removal and ice control on state highways, on the state through its Department of Public Works. Under the terms of the legislation the state is empowered to contract with counties and cities to do the work under the direction of the Department of Public Works. Prior to this year, snow control was the responsibility of the county which was repaid a portion of the cost, not in excess of $75 per mile.

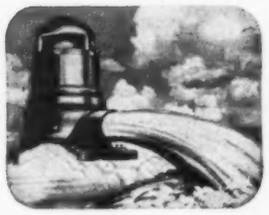
## *Durham's Small Tractors Do the Odd Jobs*

A SMALL tractor is a handy piece of equipment for any municipal street department and City Manager S. J. Mahaffey of Durham, N. C., knows how to capitalize on its versatility. Durham has three and uses them to put a host of annoying little details on an efficient production-line basis.

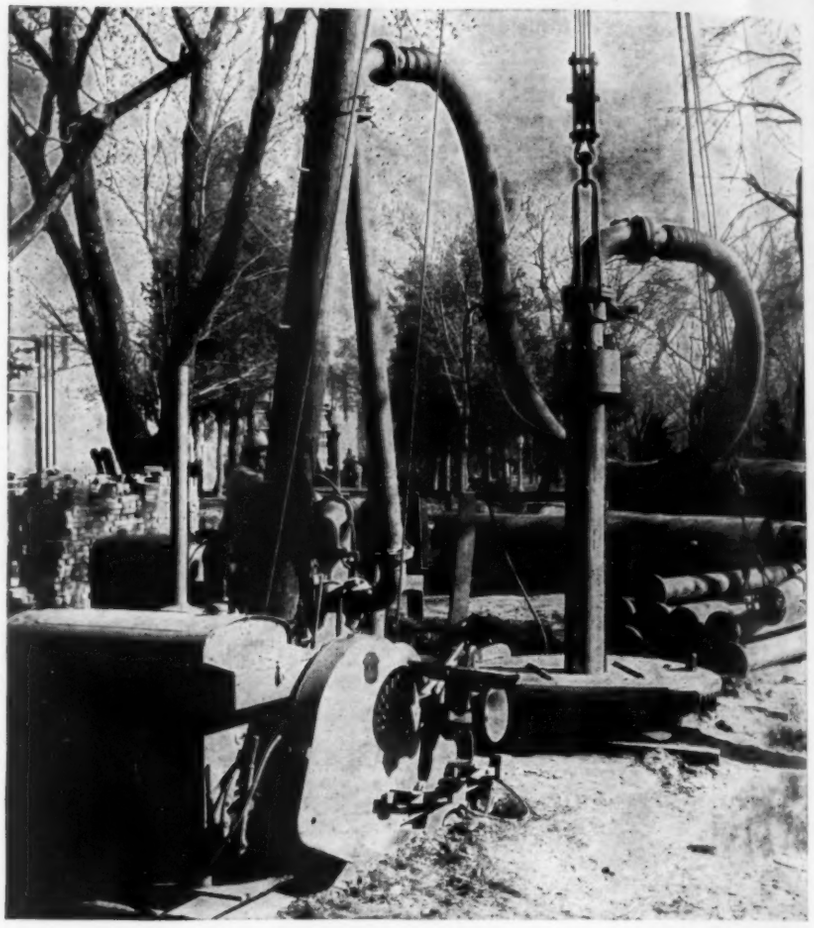
Two are International A type, gasoline powered. One of these two is equipped with a #18 highway mower and performs such tasks as mowing golf courses, edges of pavements, and sewer outfalls. It also does other tasks such as pulling an 8-foot wooden drag to smooth roadbeds before they receive a surface treatment of road oil. The other is equipped with a Hough broom and does general street sweeping tasks and cleans the streets when they are to be surface treated.

The third tractor is an ID-6 diesel and carries a ½-yard Hough hydraulic shovel and does a variety of heavy material-handling tasks.

*Three views of Durham's small tractors at work. Left to right: an 8-foot wooden drag helps smooth roadbeds; a hydraulic shovel helps the grader do a variety of moving tasks; a Hough broom permits the tractor to do general street sweeping tasks.*



# Builders of Modern



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# WELL WATER SYSTEMS
# VERTICAL TURBINE PUMPS

# Sewerage and Sewage Treatment

## *An Analysis of HR 6024 Pollution Abatement Bill*

OUT OF THE welter of difficulties that have plagued us during this quiet and peaceful post-war era—a period punctuated by strikes, shortages, and international distrust—comes another stoutly voiced objection from the sanitary engineer profession bitterly complaining of the legislation now being considered by Congress relative to stream pollution abatement.

As is now well known, the present bill, HR6024 is a compromise between the Barkley-Spence bill, HR4070 and the Mundt bill HR519. The Isaac Walton League supported the latter bill while sanitary engineers advocated the Barkley-Spence measure, although not all of them supported it in its entirety. The House Rivers and Harbors Committee held long and thoroughgoing hearings on the bills and out of this prepared the present "compromise," caustically labeled by some as a compromise that "embodies the worst and most objectionable features of both."

Recognizing that any bill being forwarded from a committee still has a long and arduous trail before becoming a law, it might not hurt to see just how this proposed legislation would affect our cities.

The bill would classify waters into districts fixed by watershed rather than political boundaries. This looks logical even though it would take power from the state authority. It makes an organized national plan of attack against stream pollution—a commendable step.

It further sets up certain definite time limits for cities, industries, or other organizations now contributing pollution to our streams to stop. It overcomes the objection that some cannot afford this service by making money available through the medium of grants or loans.

In setting up an enforcement organization it takes away certain powers now being exercised by state and local authorities. This is undesirable as far as those authorities are concerned but makes no difference to our cities except for those who could exert pressure on state boards of health and block stream pollution abatement measures being applied to them.

Granted that the bill is not perfect, it also must be recognized that a bill of this sort is desirable. The fundamental aim is to help eliminate stream pollution and this bill, if passed and executed, would accomplish this aim.

The sanitary engineers would do better to support this bill and get some sort of national organization back of stream pollution abatement rather than work for something better and get nothing.

## *Ozone Studied for Sewage Treatment*

WILLING to be convinced but not ready to accept present claims is the way the Pacific Northwest Association of the Federation of Sewage Works Associations feels about the use of ozone in the sewage treatment field. According to W. P. Hughes, city engineer, Lewiston, Idaho, and secretary of the section, a plant using ozone to treat the sewage is being built at Kelso, Wash.

A committee studying the process recently presented these conclusions:

Proponents of the process offered by Amozone of Oregon give evidence of their sincere belief in its efficiency and very definitely indicate their firm intention to proceed with vigorous efforts to market the product.

Amozone of Oregon has presented no important data to support its statements of efficiency, either with respect to the acceptable treatment and disposal of sewage or in the matter of cost of operation of plants such as they propose.

No evidence was found which would indicate approval of this system of sewage treatment by any health officer or other competent person anywhere who is not financially interested.

If and when the plant at West Kelso is finished and reported by Amozone of Oregon to be operating in a manner satisfactory to the builders and in compliance with the terms of the contract with the city of Kelso, a thorough investigation of its actual operation should be made and the facts ascertained by competent technicians.

The action (of the association) be such as to discourage cities from entertaining proposals which claim ozonation as the principal means of sewage treatment, and, particularly, to advise officials against the making of any contract for a system of sewage treatment and disposal which is not accepted by state health officers on the basis of adequate design and as being of a type which experience has shown to be reasonable in cost and successful in treatment of the city's sewage.

The conclusions and recommendations were part of a committee report. The committee consisted of Ray Koon, Stevens and Koon, Portland, Chairman; H. C. Clare, Director of Engineering Division, Idaho Dept. of Health; Prof. Fred Merryfield, Oregon State College; Roy Harris, Chief of Div. of Public Health, Washington; C. M. Everts, Jr., State Sanitary Engineer; Oregon; Prof. R. G. Tyler, University of Washington; and Carl E. Green, Cunningham and Assoc., Portland, Ore., Consulting Engineers.

## *Scalloped Plate Increases Trickling Filter Efficiency*

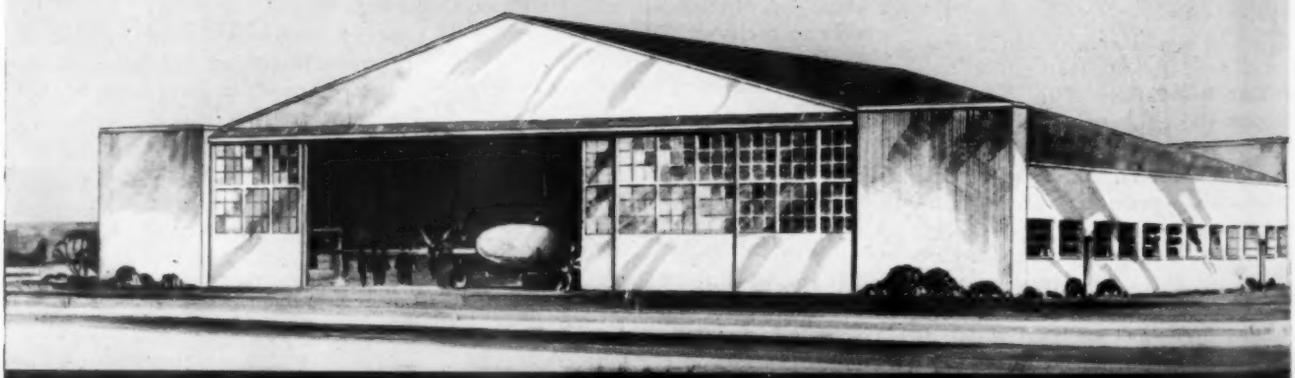
BY SECURING a plate to the arm of a rotating trickling filter at Keesler Field, Miss., R. W. Simpson, Sanitary Engineer for Gilbert Associates, Inc., Reading, Pa., was able to secure a more evenly distributed flow onto the filter bed and obtain a better filter growth resulting in higher 5-day BOD reduction.

The plate was scalloped in front of each outlet and the tips turned up slightly. This allowed even distribution of the liquid and increased its opportunity to come in contact with air. The device raised BOD reductions to as high as 92% to 98%.

Mr. Simpson explained the use of the sprinkling filter aid before a recent meeting of the New York Sewage Works Association held in Utica.

*These are the plates that were added to the distributor arms. Notice a scallop before each port. The ends of these scallops are turned up slightly.*

# MAINTENANCE HANGARS



*Write for booklet of complete line*

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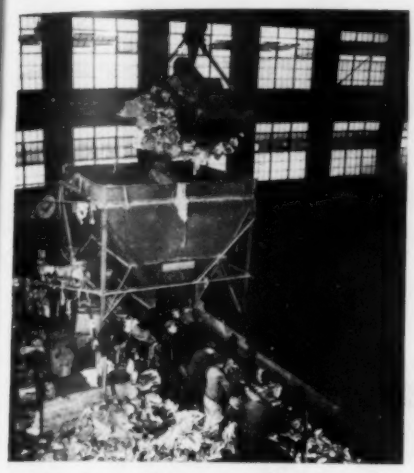
# Refuse and Street Cleaning

## *Paper Salvage— Overlooked Income?*



*This shows salvage operations in an incinerator in the Bronx, New York City. A clamshell bucket feeds refuse into a hopper and then onto a travelling belt where five men pick and bale the paper. This group can salvage one ton of paper per hour. The salvage operation represents some of the activities of the Eastern Conservation Committee of the Waste Paper Consuming Industries, 370 Lexington Ave., New York 17, N. Y. Similar work is being done by the Midwestern Consumers of Waste Paper, 809 Ambassador Building, St. Louis, Mo. One significant operating note lies in the fact that for best results the paper must be salvaged the day that the refuse arrives in the yard. Salvage operation any later than that becomes difficult because the garbage begins to digest.*

*Most of the salvaged paper goes into wall board manufactured by such companies as Johns-Manville, Upson, Celotex, Homasote. Some of it goes into roofing materials. Consequently the salvaging operations have a direct bearing on the building situation.*

MANY MUNICIPALITIES may be passing up a bet by not investigating more thoroughly the possibilities of paper salvage in the refuse collection and disposal program. Mixed paper today commands a price of $19 per ton plus freight charges. This is the lowest price. Any classification of material that the salvage crews may do would increase the price of at least part of the salvage.

Paper authorities state that this high price will probably be in effect for many years to come. The shortage of paper and hence the demand for salvaged paper is an aftermath of the war that exhausted our national resources more thoroughly than many realize. The paper situation is aggravated further by the reluctance of lumberjacks to return to the woods and resume cutting.

Paper in municipal refuse represents a healthy portion of the available supply and authorities are hoping that the present high price will encourage its reclamation. Paper constitutes 20 to 30% of the weight of refuse, consequently it would not be difficult to estimate the potential revenue that many a municipality either destroys by incineration or buries in a dump.

## *Cost Data Incorrect*

ON PAGES 84 and 85 of the June issue of THE AMERICAN CITY, in an article on the use of the sanitary fill at Forth Worth, Texas, we ran a box entitled "Highlights of Fort Worth's Experience with the Sanitary Fill." Item number 1 quotes $0.83 as the cost per ton for this method as compared with $1.12 per ton for incineration. The $0.83 figure is incorrect—it should have read $0.38.

## *Providence, R. I., Clean-Up Gets Early Start*

THE CLEAN-UP program for Providence, R. I., is under way since early March, according to Charles F. McElroy, Director of Public Works. The favorable weather this March gave the city an unusually early start.

Here is a summary of the equipment and service being used in Providence:

5—fifteen-yard garbage collection trucks, equipped with the latest modern automatic loading equipment—completely covered. (Five more are on order.)

2—motorized street sweepers being operated seven days a week—eight hours each night. (One more is being repaired and will be in use soon.)

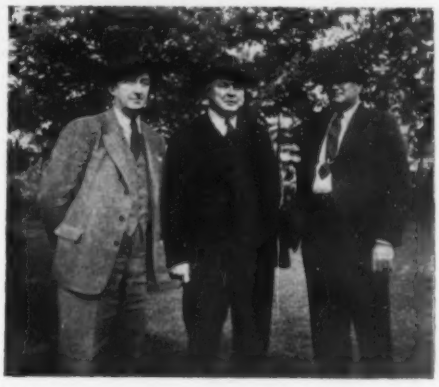
1—new motorized pickup street sweeper is on order and they are hoping for early delivery. (Until street sweeping and pickup can be motorized, a fleet of "Whitewings" are on regular duty throughout the city. See next item.)

27—"Whitewings." These are men who work in the daytime with the aid of a two-wheeled cart and push-broom. These men are distributed throughout the downtown district and other congested areas including Olneyville Square.

The police department is cooperating by distributing copies of the city ordinance which prohibits the dumping or sweeping of refuse of any kind into the streets.

The city's Clean-Up Program can only be successful if storekeepers and individuals cooperate by not depositing sweepings in the street. It also helps if refuse containers are not overfilled. Cans, paper and ashes blown from the containers give the streets a very bad appearance, even if the street has just been swept.

## *Baltimore's Clean Streets*



*These three men helped build up Baltimore's street cleaning and refuse collection program. Left is W. P. Faunon, assistant commissioner; center, F. George Eierman, commissioner; and right, R. E. McCarthy.*

AN EXAMINATION of Baltimore's street construction program cannot help but lead to a similar observation of its street cleaning and refuse collection work. One's attention is drawn to the alley (see p. 80) not only in regard to the construction but also to the immaculate neatness that the combined efforts of the householder and the city officials have attained.

Throughout the war Baltimore maintained its schedule of two garbage and one refuse collections per week for residential areas, as well as two ash collections during the heating season and one collection for the balance of the year. In addition, it cleaned its 1,000 miles of streets and 300 miles of alleys on a regular schedule and launched on a program of mosquito extermination and rodent control, the latter enrolling more than 2,000 volunteers and resulting in the death of approximately 150,000 rats.

Baltimore's experience shows that the work can be done even under difficulties. The principle requirement is a desire to do it.

# *Ryerson—Quick Source for*

# INLAND 4-WAY FLOOR PLATE

Take a careful look at this close-up of Inland 4-Way Floor Plate. Note the 4-way projections.

Now read of the advantages Inland 4-Way Floor Plate provides:

**1.** *Safer traction* on walkways, stairways, around machinery and wherever sure footing is important. The 4-way projections grip feet or wheels from every angle. Give 4-way protection against dangerous falls.

**2.** *Longer wear.* Inland floor plate is rolled from tough, open hearth steel with high wear resisting qualities.

**3.** *Great structural strength.* Overlapping projections reinforce the strong, rolled steel lengthwise as well as crosswise giving greater stiffness. And Inland 4-Way Floor Plate has a tensile strength of approximately 55,000 pounds.

Then you get the additional advantage of a continuous pattern that is pleasing in appearance; matches whether laid side to side or end to end and permits sweeping and drainage in four directions.

Inland 4-Way Floor Plate is available for quick delivery from Ryerson Steel-Service Plants, in two pattern sizes and several thicknesses. Write for catalog and samples too if you care for them.

Joseph T. Ryerson & Son, Inc. Steel-Service Plants at: Chicago, Milwaukee, Cleveland, Cincinnati, St. Louis, Detroit, Philadelphia, Pittsburgh, Buffalo, Boston, New York.

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Ryerson stocks of seamless mechanical tubing, boiler tubes and Allegheny Stainless tubing are large and complete. Contact nearest Ryerson plant for prompt delivery.

# RYERSON STEEL

# Public Safety

## *Records Are Essential in Policewoman's Work*

WITH THE increase in the number of crimes involving women and in the juvenile delinquency rate and venereal disease incidence, the demand for policewomen has been accelerated and, accordingly, the importance of records has been stressed. The subject is covered in the manual, "Techniques of Law Enforcement in the Use of Policewomen with Special Reference to Social Protection," issued by the National Advisory Police Committee on Social Protection of the Federal Security Agency, Washington, D. C.

If the policewoman is to do her job effectively, simple but accurate records are essential. They form the basis of her regular reports to her chief on complaints received and referrals made. The successful policewoman has found that she should make a card on every complaint and that on more serious complaints she should also make a face sheet with chronological notes of all pertinent facts and actions.

By consent of the administrator, she arranges with appropriate social agencies a satisfactory method of mutual use of records. She keeps a card file on places at which violations of laws have occurred, noting pertinent facts and including addresses of places of reported venereal disease contacts and a record of complaints received, as well as of places identified by the policewoman herself or other police officers.

Records form the basis of any long-range evaluation of the effectiveness of control programs and are a necessary foundation for future departmental and community planning.

## *Services that Safeguard the Community*

SUPPOSE an insurance agent were to offer you a policy, guaranteeing you and your family protection of life, health, and property at all hours of the day and night.

Suppose that policy also gave you unlimited use of nearly 2,000 acres of the nation's finest park and playground system.

Suppose a force of some 2,000 men and women trained in medicine, police and fire work, engineering, the horticultural sciences and public administration backed such guarantees.

Suppose you could buy such a policy by paying an annual premium of $13.35.

Of course, we're just supposing as far as insurance companies are concerned. But the Department of Public Safety of the City of Rochester can and does issue such insurance year in and year out on an ever increasing and more efficient scale.

These services come to the citizens of Rochester each year for a total cost of only $13.35. Based on an estimated city population of 325,000, the per capita costs for the various services offered by the Department of Public Safety during 1946 follow:

| | |
|---|---|
| Police | $ 3.69 |
| Fire | 4.00 |
| Commissioner's Office | .05 |
| Traffic Engineering | .25 |
| Fire Police Telegraph | .25 |
| Municipal Hospital | 1.54 |
| Health Bureau | 1.06 |
| Indigent Sick | .15 |
| Parks | 1.35 |
| Playgrounds | .85 |
| Building Bureau | .16 |
| | $13.35 |

From *The Rochester Municipal Journal* for March 1946, published by the Department of Commerce of the city of Rochester, N. Y.

## *Large Loss Fires Increase*

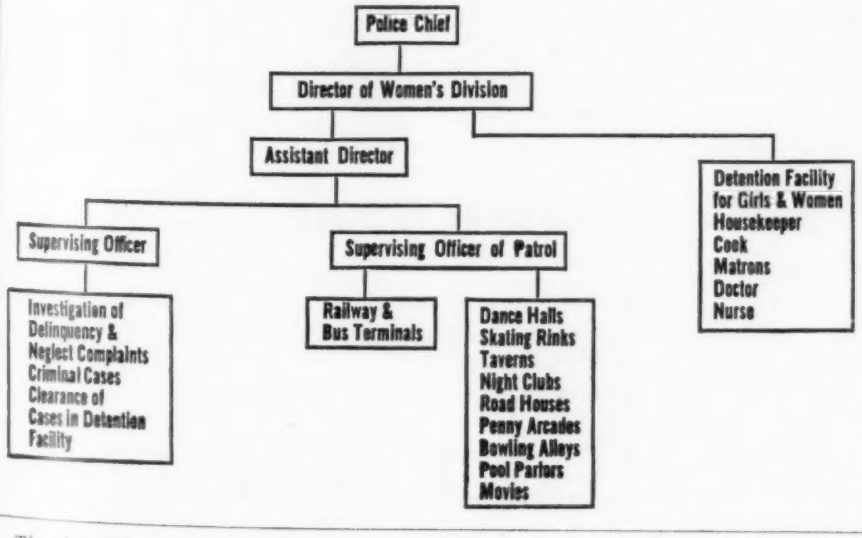
LARGE loss fires (fires exceeding $50,000 loss) have skyrocketed 48% in recent months in the United States and Canada. According to a regular quarterly survey of the National Fire Protection Association, 329 fires, totaling $48,800,000 were reported to the association from December 7, 1945 to March 6, 1946, compared with 158 in the preceding three months. These 329 fires represent 32% of the estimated $151,045,000 loss for the approximate 175,000 fires occurring in the quarter ending March 1.

In terms of dollar losses, group fires were most costly ($9,348,700); multiple occupancy buildings, second ($8,114,850); manufacturing plants, third ($7,761,800); warehouses, fourth ($5,416,260); and mercantile stores, fifth ($2,149,850).

An analysis of the 329 fires revealed the following data:

| | |
|---|---|
| Discovered by— | |
| Employees or Occupants | 131 |
| Outsider or Passerby | 108 |
| Watchman | 27 |
| Explosion | 20 |
| Police | 19 |
| Unknown | 19 |
| Automatic Alarm | 5 |
| Total | 329 |
| Reported by— | |
| Telephone | 196 |
| Street Box Alarm | 55 |
| Unknown | 44 |
| In Person | 18 |
| Automatic Alarm | 5 |
| Police Radio | 4 |
| Fire Siren | 4 |
| Detected at Station | 2 |
| Sprinkler Water Flow Alarm | 1 |
| Total | 329 |

**SAMPLE ORGANIZATION CHART OF WOMEN'S DIVISION**




*The chart above gives one method of organizing the Women's Division of a Police Department. Records covering the work are necessary for efficiency.*

# CONTRACT PIPE CLEANING

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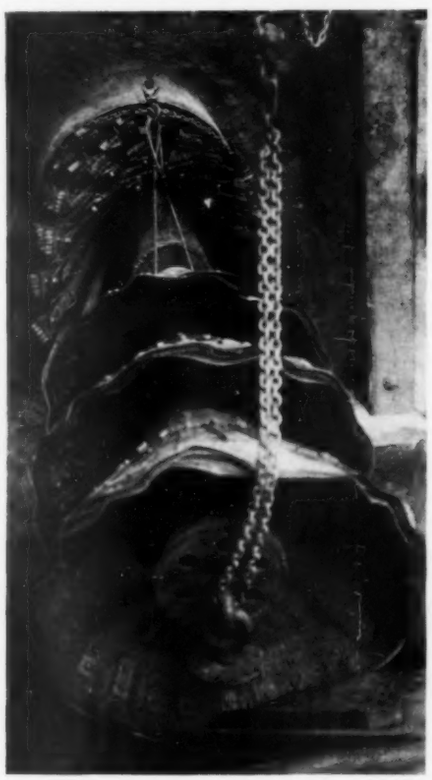

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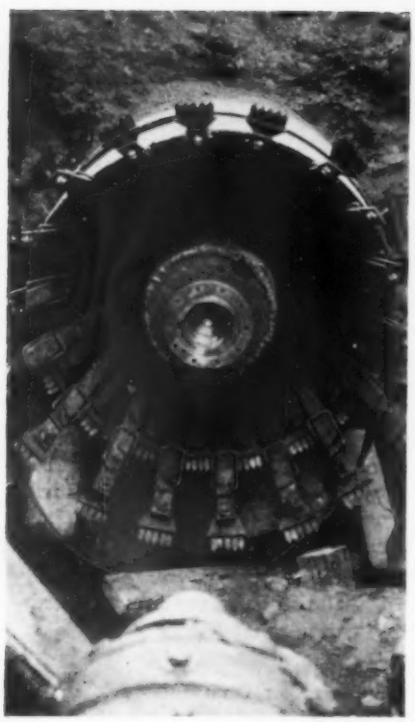

Scraping—Plowing—Brushing
3 Cleaning Operations
in One
To Remove Tubercles and Coating, 48″ Fabricated Steel Water Main, Length of Run 15,940′—Amt. Deposit (Est.) 124,000 lbs.

### SOUND BASIC DESIGN OF EQUIPMENT PERMITS:

1. Combining cleaning tools to fit job requirements, i.e. plowing, brushing, and scraping.
2. Controlling pressures of tools against pipe wall to overcome resistance of deposits.
3. Completely automatic compensation for out-of-roundness of pipe—as much as 6″ in 48″ pipe.
4. Uninterrupted travel of cleaner irrespective of bends and out-of-roundness as in fabricated steel construction.
5. Cleaning between rivets and recessions.

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Vol. LXI, No. 7 The American City July 1946

# Hotel Fires

By T. ALFRED FLEMING

Director of Conservation
National Board of Fire Underwriters
New York City

THE DISASTROUS La Salle Hotel fire in Chicago with its dreadful loss of life, followed so closely by the Canfield Hotel tragedy at Dubuque, Iowa, and many other hotel fires of recent date again proves that after "the ashes have cooled the people forget." While the immediate cause of each fire is being investigated we cannot deny that its early spread throughout the building was due to mistakes in construction which have been forcibly brought to our attention by almost every large hotel loss in years. When will we ever learn to apply common sense in requiring well-known safety standards before hotels will be licensed for use? Structural faults which distribute the fire, plus the failure of the personnel are accountable for the large toll of casualties.

In reconstruction prosperity, hotels take a leading position. Nearly 30,000 hotels containing almost 2,000,000 rooms with an average investment of about six billion dollars are an important item in our financial future.

## Life Hazard in Hotels

Life hazard in hotels is of vital importance from both the humanitarian and the business viewpoint. A review of hotel fires, shows that the majority of victims are found in the rooms, halls, or stairs. In many cases exit facilities were inadequate; or the discovery of the outbreak was delayed so long that the withering heat completely filled the structure. As the guests started for the stairs or halls, they dropped in their tracks by breathing superheated air, or were driven back into their rooms, hopelessly cut off from the exits that seemed so near. In too many instances the fire escapes, if supplied at all, are of little value.

Upon reaching a certain city a short time ago, I secured a room in the best hotel on the fifth floor and, as usual, I looked over the exit facilities before accepting the location. I found two fire escapes available and about 10 p.m. when I happened to be dropping a letter in the mail chute, I noticed the watchman doing something at one of the fire escape entrances. I investigated and found he had just placed a padlock on the door. "Why are you locking these fire escapes?" I asked. He replied, "I go off duty at 10:30 and all the fire escapes have to be locked so that thieves cannot enter to rob the guests." It is sufficient here to state that the custom was discontinued immediately.

## Protection of Vertical Arteries

The first recommendation then, for rendering hotels fire-safe is the protection of vertical arteries. This means enclosing stairways, elevators, dumbwaiter shafts, and similar flues which extend from floor to floor, and which make the whole building virtually one big room so far as fire is concerned. It also involves fire-stopping all walls at the story line, protecting laundry chutes and ventilating ducts with doors or dampers which would automatically close at a dangerous temperature and thus cut off the upward sweep of hazardous products of combustion. Where elevators or stairs extend to the basement all approaches to them should be cut off from other sections of the basement by standard fire walls and doors, to segregate such entrances from basement hazards.

These principles apply in a building whether it is combustible or fire-resistant, for the contents of the best structure in the world can produce a fire of serious proportions. Older buildings should be supplied with a sprinkler system in all dangerous areas at least, which would also be equipped with an automatic fire alarm system. Early discovery of a fire coupled with an immediate call to the fire department will spell safety for thousands.

## Seasonal Hotels Often Flimsy

What has been said of hotels which are sub-standard in construction, is applicable to most of the seasonal hotels built for the accommodation of summer and winter tourist trade. These properties are frequently constructed of flimsy and burnable material and are very often located beyond any fire department response. Even if they are supplied with fire fighting facilities, the changing personnel obstructs the desired efficiency in operation. That is the reason why seasonal hotels, when they take fire, are usually a total loss.

The question of exit facilities should be given particular study. Regular stairways and elevators frequently discharge all guests in the main lobby, remote from the exit doors. For this reason the lobby should be thoroughly protected from any fire which might originate in basement areas so that there would be no possible danger in using this avenue for leaving the building. If other stairways have not been provided, it is essential that they be built and, if possible, they should be arranged in the form of smokeproof towers, leading directly to separate ground floor exits. Buildings can easily be divided into separate areas by standard fire walls so that if one section is involved by fire, other exit facilities will not be put out of service.

This article enumerates just a few of the features which ought to be considered by hotel managements and every one mentioned has a direct bearing on the safety of the guests.

## Dallas Hotels and Fire Department Have a Plan

*Officials of the Dallas, Texas, Fire Department and members of the Dallas Hotel Association are making a united effort to avoid hotel fires.*

*The need for such action was dramatized by a fatal hotel fire last month after a preliminary conference had been held,*

*Under the plan, as announced, hotel employes are to be assigned certain duties for which they will be accountable in case of fire.*

*Special methods for fighting fires are to be taught hotel employes by Fire Department officials. Proper handling of elevators, fire extinguishers fire exits, etc., will be included in the instruction. Particular attention will be given each hotel on its problems.*

# Baltimore Renovates Its Streets

*A typical alley construction in Baltimore. Note how clean these alleys are kept.*

*This shows the Armco Hel-Cor drain pipe tying into the street catch basin.*

*Where subgrade conditions demand it Baltimore engineers specify underdrain as well as soil stabilization. The underdrains are backfilled with a coarse gravel.*

***Careful subsoil studies guide in the construction of streets for Maryland's largest city***

THE 1946 PAVING program for Baltimore, Md., is centered about five main points.

1. The replacement of worn-out pavements for which $1,000,000 has been appropriated with an additional $525,000 for repairs to sheet asphalt streets.

2. The construction of new pavements which will cost approximately $185,000.

3. The construction of "builder's agreement" streets in certain development areas with the cost being shared between the developer and the city on a 75-25% basis. This construction will amount to an estimated $400,000.

4. Local street improvement with the cost shared on a ⅔-⅓ basis between the property owner and the city. This will amount to $75,000.

5. Alley repaving amounting to $225,000 with the cost to be borne entirely by the property owner.

Baltimore's highways engineer, William N. D. Fischer, groups the street improvements into three classes: sheet asphalt with an 8-inch portland cement concrete base; 8-inch portland cement concrete designed to receive a three-inch sheet asphalt wearing surface; and 7-inch concrete used in the residential areas. The $1,000,000 project of replacing worn-out pavements along with the $525,000 repair job will involve in its entirety the sheet asphalt construction. The $185,000 of new street construction will utilize eight inches of portland cement concrete designed to receive the 3-inch topping in the future; the "builders agreement" pavement, along with the local street improvements and alley construction will all require 7-inch pavement.

### Concrete Specifications

The concrete specifications call for a strength of 3,000 lbs. at 28 days and proportioned at 5.40 cubic feet of aggregate and 6.75 gallons of water per bag of cement. The specifications further clarify this by calling for 189 lbs. of sand and 350 lbs. of gravel per bag of cement, or 216 lbs. of sand and 323 lbs. of crushed stone, the figures being based on surface-dry material at a specific gravity of 2.65.

If early strength is required, the Baltimore practice is to obtain it by the

use of a calcium chloride admixture rather than by a special grind of cement. Engineer Fischer customarily specifies a limiting figure of 2% calcium chloride per bag.

### Curing Methods

For curing, two methods have proved popular. One utilizes an asphalt cut-back sprayed at a uniform rate of not less than 0.050 gallons per square yard and not more than 0.067. The specifications prohibit the use of the cut-back on curbs and sidewalks. The second method of curing utilizes the colorless membrane similar to Truscon Trucure applied at a rate varying between 0.034 and 0.04 gallons per square yard.

### Dowel Bars Only Reinforcing

Following wartime practice, Baltimore has eliminated all reinforcing with the exception of load-transfer dowel bars, and at these joints one customarily will see used the Dow-Weld welded joint assembly. This requires the use of ¾-inch bars with one end bent to a 3-inch radius and welded to a pair of ½-inch transverse tie rods. The straight ends of the dowel bars are both painted and greased. When the assembly is used at an expansion joint, the straight ends are covered with the customary metal cap. The Baltimore practice adheres to the prewar system of a load transfer expansion joint approximately every 30 feet, with the exception of one section of the Potee Street paving project where every third joint was a load transfer expansion type and the other two, load transfer contraction joints.

The concrete construction consists of lanes averaging 10 feet in width with a curb-and-gutter section poured separately. The curbs are 9 inches at the base and 8 inches at the top with the gutter section varying between two and five feet in width. The curb-and-gutter sections are tied to the traveled lanes and the lanes are tied to each other by ⅝-inch dowel bars four feet long placed four feet on centers.

*All expansion and contraction joints carry these Dow-Weld load transfer assemblies.*

### Emphasis Put on Subgrades

The subgrade receives particularly close attention in the Baltimore work. All subgrades are stabilized to 90% of their optimum density as determined by the Proctor test, and where it appears advisable, Spiralweld Armco pipe underdrains are installed in trenches filled with crushed rock. The design calls for a line down each side with a lateral at 50-foot intervals extending to the center of the street and alternating first to one side and then the other. These lines are tied into the catch basins at the street intersections.

For sheet asphalt work, the contractors have the choice of native lake asphalt or oil asphalt (the petroleum by-product). The petroleum by-product has been used, as has native lake asphalt, and both have proved satisfactory. The sand used with the asphalt is closely graded to conform to the following specifications:

| Passing | Retained | Percent |
|---|---|---|
| #8 | #10 | 0-5 |
| #10 | #20 | 2-10 |
| #20 | #30 | 5-15 |
| #30 | #40 | 8-25 |
| #40 | #50 | 10-30 |
| #50 | #80 | 15-40 |
| #80 | #100 | 5-20 |
| #100 | #200 | 10-25 |
| #200 | —— | 0-5 |

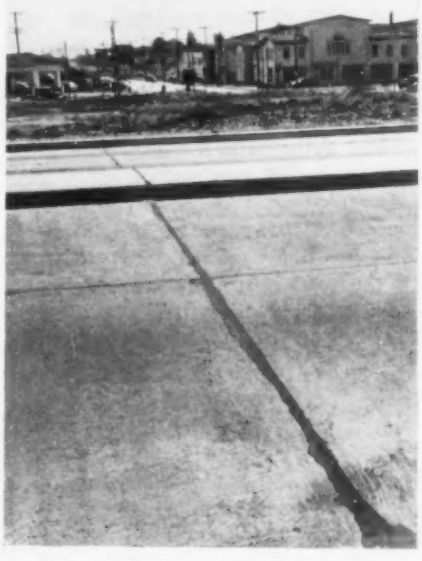
It is also specified that the total passing the #80 and retained on the #200 be limited to 20-35%. For filler the city uses either portland cement or dry limestone dust.

In placing the sheet asphalt, the specifications call for the customary 1½ inches of binder and 1½ inches of wearing surface. The binder course contains 4-6% bitumen and 15-30% aggregate passing a #10 screen. The balance of the aggregate passes a 1-inch screen. Both the binder and wearing surfaces are laid with a traveling asphalt paver similar to the Barber-Greene except for certain difficult-to-manage intersections.

It is estimated by Engineer Fischer, as a result of incorporating the features outlined above in all types of street construction, that a considerable increase in paving life of streets will be obtained. There is no reason why the passage of time should not verify this prediction.

All street construction is a function of The Bureau of Highways under the Department of Public Works. Nathan L. Smith is chief engineer. William N. D. Fischer is the highway engineer, and Thomas J. Gaffney is construction engineer.

*Engineer Gaffney inspects a typical curb and gutter section.*



*On dual highways the same joints will go through the entire width of pavement.*

*Occasionally the engineers omit the curb gutter on one side when they anticipate additional development.*

# Million Dollar Recreation Plant Planned As War Memorial for North Little Rock, Ark.

By FRED P. PETRUCELLI

A HUGE recreation plant, which is expected to surpass in size and beauty any existing development of its kind in the entire South, will be constructed as a war memorial to the sons and daughters of North Little Rock, Ark., who fought and died for their country.

On an undeveloped plot of ground measuring approximately 200 acres in the geographical center of the city, the recreation plant, estimated to cost $1,000,000, will contain a sports arena in a spacious memorial building. The arena, seating over 6,000 persons, has been designed to carry the load of major basketball contests, featuring teams from all over the state.

Included in the over-all plans for the center is the construction of modern-type highways to run adjacent on the east, north, and west sides of the area, according to Mayor O. W. Neely, who announced the plan at a special meeting of the local Lions Club.

National Highway 67 will run into an adjacent street at the northwest end of the area and then into a cloverleaf intersection. The highway will run east, form the north boundary of the project, continue on across the Missouri Pacific Railroad's main Kansas City line and connect with Highway 65.

The city's main street will be widened considerably to care for the expected flow of traffic to the plant.

### Features of the Project

Here are the outstanding features of the project:

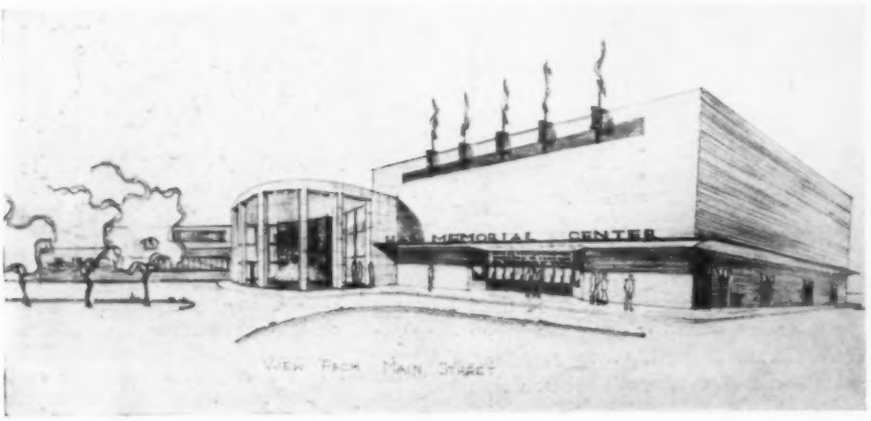
A huge swimming pool and diving pool, with shallow facilities for children
An open-deck bathhouse
A grill and soda fountain and lounging areas
Bowling alleys, rifle ranges, miniature golf courses
Nine tennis courts and an 18-hole golf course, softball and baseball diamonds
Acres of picnic grounds, complete with eating facilities, barbecue pits and gas jets, which can be utilized by the insertion of a coin in a connected gas meter
An open air theatre, which seats about 1,000 persons
Football and baseball practice fields for use by high school athletes

The entrance of the memorial building will contain a bronze plaque honoring the city's men and women who fought and died in the nation's wars.

The project has been unanimously approved by the entire city council and members of the City Planning Board, civic and business organizations, and by the public as a whole.

"We are now embarking on a long-range planning program and this memorial for our service people is the first step in a series of major projects," Mayor Neely said.

The project will be financed by a bond issue and formal opening of the area will be held during the spring of next year.




## How the War Memorial Idea Has Evolved

THE FIRST WAR memorial was probably a cairn or heap of stones over the common grave of men killed in the battles of early history. Where a cairn was at the edge of a road or footpath each traveler passing by would add another stone as a mark of reverence. There is a village, it is said, in Scotland, where a cairn of one hundred and forty-two stones may be seen upon the pubic square. Each stone was placed for a man of that village who went to the first World War and did not return.

Later in history monuments of masonry replaced cairns, and shafts and columns—some of them carved and lettered—were set up in public places. Often in England, less often here, a cross of stone was placed at a road intersection or in the public square. The famous Cenotaph at Whitehall is essentially a tall shaft of stone, "a monument to one who is buried elsewhere."

Still later in history statues of kings and generals were set up in public squares and at the intersections of city streets and avenues. Washington today bears the heavy mark of the "bronze man on a bronze horse" on a multitude of small parks and traffic circles. The first "object of art" of this type in America was a lead statue of George III, gilded, and set up at

(*Continued on page 137*)

# Water Supply Teamwork

***The Montclair, N. J., water works demonstrates how well-developed coordination can keep a three-level service operating at maximum efficiency***

*The Grove Street pumping station is housed in an attractive building which is appropriate to the surrounding residential area.*

IT PAYS to keep pumps operating at full capacity with a steady load. It also pays to arrange pumping where possible to operate on the off-peak electric power rate. It is a good stunt always to have a reserve supply of water available if you need it. All these factors are standards that the Montclair, N. J., water works aims at, and attains to an admirable degree.

Superintendent Charles G. Bourgin runs his water works with the smoothness of a well-trained orchestra. His distribution system is divided into low-, middle,- and high-service sections with a difference in elevation of 533 feet between the low and high. This requires a pair of pumping stations and one storage reservoir whose operation he coordinates smoothly.

The water system as a private company, originally begun in 1887, utilized a well supply at the present Watchung Ave. pumping station. In 1899, the community outgrew its wells and turned to the Passaic River for its supply. Later, in 1924, the town purchased the water company and at the same time drew on the more adequate Pequannock supply used by the city of Newark.

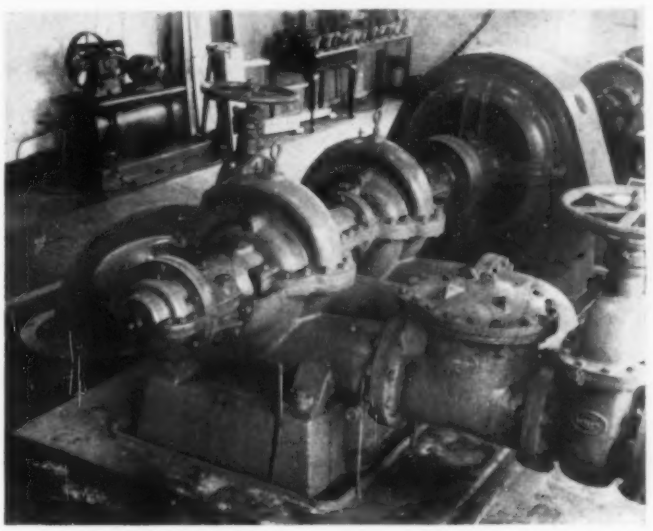
This arrangement, however, was only temporary. Meanwhile, the Wanaque system was being developed as a cooperative arrangement between seven different communities, and Montclair anticipated drawing on it. In 1930 the system was completed and it was able to furnish 100 mgd. With this available the community turned back the Pequannock supply with the reservation that it be kept tied to the system for standby, and drew from the 5 mgd allotment that the Wanaque system set aside for Montclair. Montclair was the first user of Wanaque water.

The Montclair system supplies water to all of Montclair, Cedar Grove, and Glen Ridge (a Wanaque participant for which the city supplies pumping and transmission facilities), plus portions of Bloomfield, Orange, West Orange, Verona, Little Falls, and Clifton. In most cases the department serves individual customers, but Cedar Grove is a main-line consumer.

The town is very long and narrow (about 1½ by 5 miles) with the long dimension being parallel to the mountain, leaving 3 long narrow distribution systems with average pressures of 110, thus further complicating the problem of distribution and transmission. Montclair lies on the side of the picturesque Watchung Mountains and, as mentioned previously, the distribution system is divided into three levels —high, intermediate, and low service. The 50-foot 2½-mg standpipe marks the high point in the system at 683 feet above mean sea-level datum. The low point is 150. Two pumping stations serve the low and middle areas, while the tank serves the high and Cedar Grove.

Water enters the system through the Grove Street pumping station which must handle all of Montclair's supply. At present the station has three electric-powered pumps—one 2-mgd and one 3-mgd Fairbank-Morse pump and one 5-mgd Worthington. A Westinghouse trunk-and-cell type of switchboard controls these pumps and a Simplex venturi meter records the flow into the station.

A portion of the water from this station goes directly to the low-service area and Glen Ridge while the balance is pumped to the Watchung middle-service station. The Grove Street pumps normally run at full rated capacity although a controller is supplied on the 5-mgd pump that will vary this rate in accordance with low-service demands. Superintendent Bourgin recognizes the weakness of the station, in that it is dependent upon purchased electric power, and is completing negotiations for the installation of a 10-mgd gasoline powered pump for reserve, as well as a 1½-mg 3-compartment, low-service reservoir to provide



*This big Morris pump in the Watchung pumping station turned in a bit of dramatic service last year following a power failure in which stored water reserves fell to a dangerous low. When it went into action it was able to correct this deficiency quickly. Normally, it is operated during off peak electric load periods.*

much needed low-service storage for fire protection, improvement to service, and to make possible storage pumping during the low electric demand period.

The Watchung station contains a 3-mgd DeLaval and a 5-mgd Morris pump that lift the water to the high service tank. These, of course, can be operated at full rated capacity, but present operations are limited to that period of the night when the plant can take advantage of the low demand rate. A 4-mgd DeLaval high-service pump is also in this station, powered by an 8-cylinder 260-hp Buffalo gasoline engine and does yeoman service as stand-by. There are a 1½ and 2½-mgd DeLaval pumps that supply the middle area directly just under consumption, the balance of the water being supplied from the high area (storage) through 5 Ross reducing valves.

This set of pumps demonstrated their value colorfully last year when the electric power supply broke down for nearly 3 hours at Grove Street. During this time the high-service reservoir had to supply the entire town, which it could do since the various services are interconnected by means of reducing valves. Superintendent Bourgin with his assistants watched the level in the big tank apprehensively, and as it began to drop to the danger point he sent a crew down to the Pequannock interconnection to turn on this reserve in case the emergency warranted it.

However, just before the critical point arrived, the utility repairmen repaired the break and restored the power. For a short time Superintendent Bourgin turned on all the pumps that the system had and soon they had the reservoir back in a safe condition. Had the proposed standby gasoline engine driven pump been installed in the Grove St. station, both stations would be independent of power failures.

Under standard operating conditions Superintendent Bourgin aims to let the 1½-mgd and 2½-mgd pumps supply what they can of the middle service area and get the balance from the storage reservoir. Then at night he puts the high level pumps into service and restores the amount that was lost during the day. This puts a minimum power requirement on the pumps during the day when demand charges are high, and thus reduces operating costs.

The big 2½-mg standpipe at the high point in Montclair's water system controls the distribution of water to the high service section and also serves as a reserve for the balance of the city. This high part of town contains many desirable home sites and consequently has been built up with some of the better homes. Some of these have been constructed high enough to restrict the operation of the tank itself, and the operators find themselves unable to allow a greater draw-down than about 20 feet. The tank is constructed of steel and is one of the first in this area to be protected by the cathodic type of equipment, and one of the largest to be so protected.

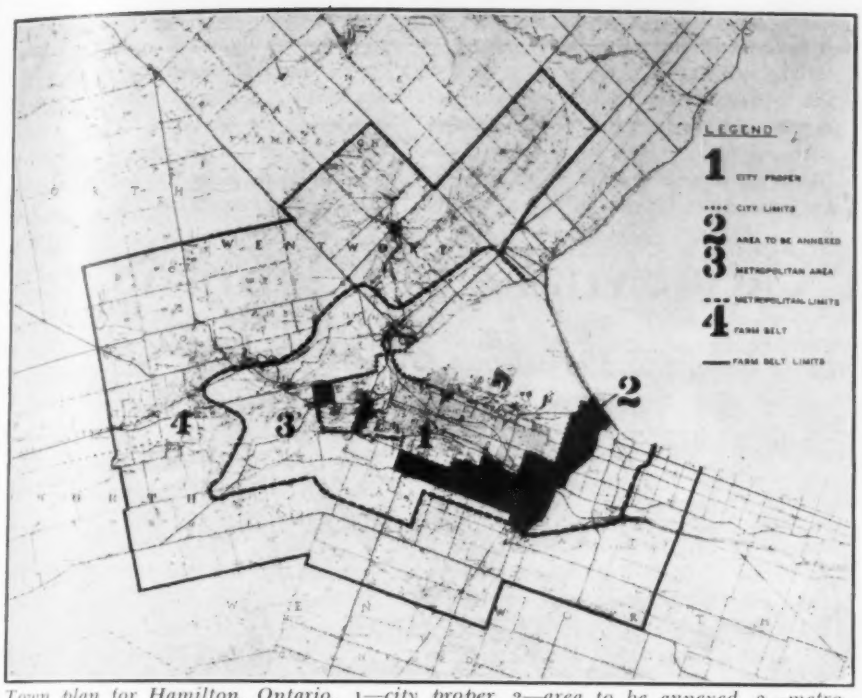
Metering has come in for careful attention by the Montclair water bureau. For many years the Bureau maintained a double rate standard charging $2.10 per thousand gallons for the low-service area and $2.90 per thousand for the middle and high areas. The rates recognized the early distribution situation in which the low-service customers received water by gravity while the other areas required pumping. Later, when all supplies required pumping at least once, this division of charges did not represent an equitable method of charging. So after making a careful study, Superintendent Bourgin established a single rate of $2.65 which would, as nearly as he could estimate, yield a net revenue of 6% in the operation of the utility.

Since 1936, Superintendent Bourgin has developed the expediency of training the crews so that each man can do several jobs beside his own. This was most helpful during the war-caused man-power shortage. Originally there was a little apprehension on the part of the men about this policy since each felt a certain ownership of his work. However, when they were persuaded that it actually made them more capable and valuable not only to the Bureau but to themselves, this prejudice soon disappeared. The system are 100% metered; the ⅝-inch meters are inspected at 10-year intervals, larger meters are tested once a year or oftener. A simple card check system was developed to assure testing of meters in accordance with the planned schedule.

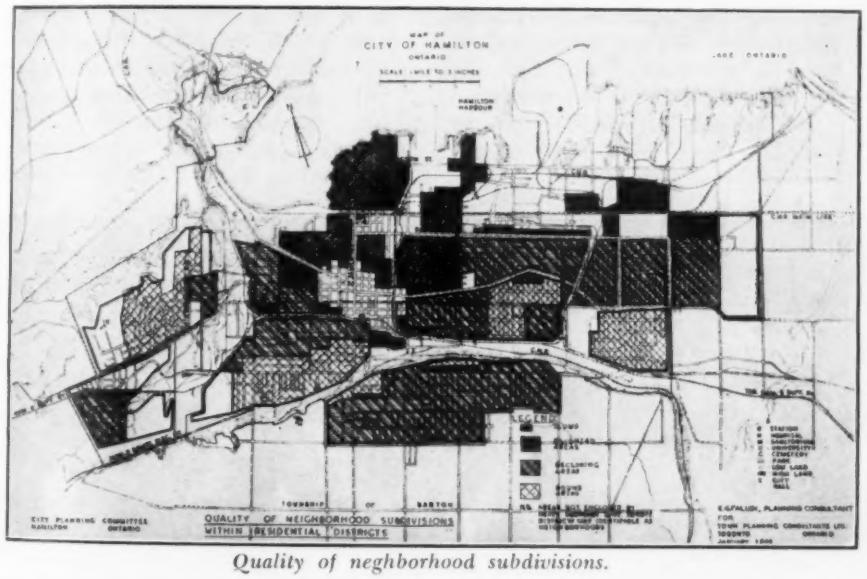
The Bureau makes its own taps up to 12-inches and carries its own set of pipe cutters up to 16 inches, lays all water mains of all sizes through 24 inches. For repair jobs the Bureau maintains, in addition to the regular equipment, a portable Homelite generator powering 250-watt Crouse-Hinds floodlights plus three gasoline-powered Homelite pumps. A steel ribbon sewer-type snake was used to clean clogged galvanized iron and lead lined service pipe during the war, and in winter or periods of emergency where immediate relaying was not practicable. This was done because it was felt that as the water flushes out it eliminates any source of contamination by reason of the chlorine residual and high velocity obtained in pipe after reaming. A Payne Deane valve operator makes it easier to operate gate valves. "New" and "relay" services are "pushed" and "pulled' with a Simplex pipe jack (up to 2 inches) with success and economy.

Superintendent Bourgin gives full credit to the loyalty and cooperative spirit of the employes, together with the aid of a regular educational program, for being able to successfully operate the Bureau during the war.

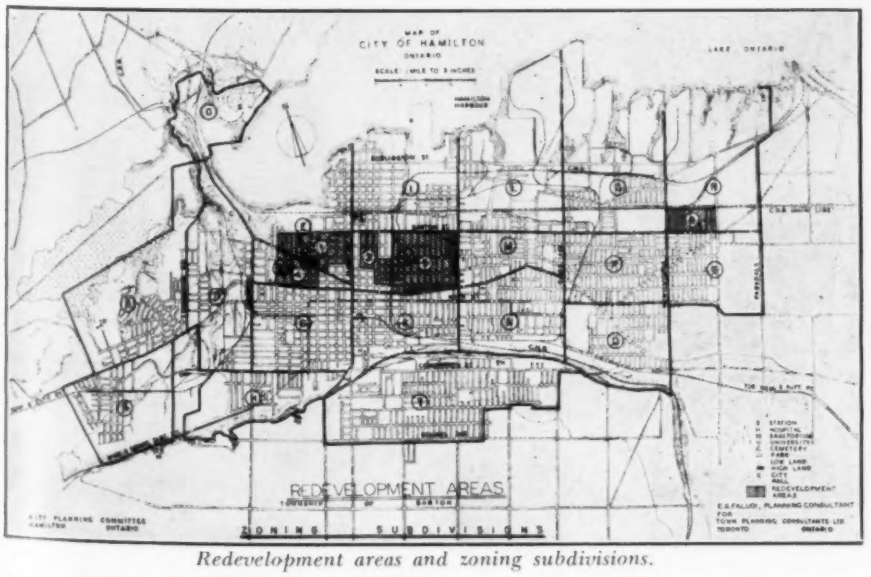
*This is the 2½ mg storage reservoir that Monclair uses for its high service distribution. Just visible halfway up the tank are Rust Arrestor element anodes which supply cathodic protection to this tank. The smaller tank in the background is not used.*




*Town plan for Hamilton, Ontario. 1—city proper, 2—area to be annexed, 3—metropolitan area, 4—farm belt.*




*Quality of neghborhood subdivisions.*




*Redevelopment areas and zoning subdivisions.*

# Canadian City Prepares to Stop Blight

TWO FEATURES of the master plan now being prepared for submission to the city council of Hamilton, Ontario (see page 88 of this issue), are the designation of a farm belt beyond the metropolitan area and the proposals for redevelopment of five blighted areas for residential use.

The farm belt area, shown in the map above, will have an area of 100.73 square miles. The present population of the city is about 180,000 and that of the metropolitan area is about 190,000. It is expected that by 1975 the city will have a population of between 210,000 and 225,000 and the metropolitan area about a quarter of a million. The metropolitan area will contain 56 square miles, which the planners estimate is required to house and provide for the commercial, industrial, social, and recreational needs of the population in this area in which development up to the present has been haphazard. Land will be acquired for a greenbelt and park system within the metropolitan area.

This planning area is made possible under the recent planning and development act providing that when a municipality wishes to have an official plan it must apply to the provincial government which may define and name a planning area. If the planning area covers more than one municipality, one of the municipalities is designated by the provincial government to formulate the official plan and the scope and general purpose of it. A municipality within a planning area may have its own plan for local purposes by obtaining from the provincial government a designation for a subsidiary planning area.

Redevelopment of the five areas designated by the Hamilton City Planning Committee for this purpose is possible under the provisions of the National Housing Act providing for planning and construction of low-rental dwellings. This act authorizes direct federal contributions toward slum clearance and provides long-term loans to finance the operation of limited-dividend corporations engaged in the construction of low-rental housing. Financial assistance of this type is furnished only if the property involved is properly protected by community planning and zoning. The

Planning Committee's study indicates that of the 3,700 acres in residential use (36.8% of the total area of the city proper) at least 1,000 acres "have depreciated or have fulfilled their usefulness for good living—accommodating about 50,000 persons."

The chief cause of this condition is insufficient control of the city's growth. Business and industrial areas are scattered, and, because the street system is inadequate, heavy traffic has been tolerated on residential streets. Besides the wholesale attack by means of integrated planning and rebuilding on a large scale on the problem of deterioration, the committee has recommended that present conditions be improved by intelligent use of zoning restrictions, parking regulations, and backyard regulations. The purchase of land for publicly operated parking lots or garages in the central business area is recommended.

# Oklahoma City Analyzes Planning

## *Another in a Notable Series of Verbal and Graphic "Clinics"*

By ELMER T. PETERSON

OKLAHOMA CITY is becoming famous for its verbal and graphic "clinics," which are a streamlined form of the old conventions, bearing down heavily on technical analyses, taking things apart to see what makes them tick.

Its aviation clinic is now an established national institution and its soil conservation clinic is equally successful. Oklahoma City also has had annual livestock and chemurgic clinics, and in April of this year it started a community planning clinic which featured speeches and demonstrations by such nationally known planners as Flavel Shurtleff, Harland Bartholomew, Herbert Hare, Seward H. Mott, Julius Tarrant, Paul Oppermann, Eugene N. Smith, Lieut. Gen. Raymond A. Wheeler, Major General U. S. Grant and the mayors of three cities where outstanding planning has been accomplished—A. P. Kaufman, St. Louis; Vincent J. Murphy, Newark; and J. W. Rodgers, Dallas.

In addition to the visting speakers there were addresses by local speakers, including Dr. Herbert Bruner, superintendent of the city schools; Governor Robert S. Kerr, Mayor R. A. Hefner, Edgar Van Cleef, and others.

The sessions were held Friday and Saturday, April 19 and 20, covering forenoon, afternoon and evening, besides luncheon and dinner meetings. The civic dinner on Friday evening at the Chamber of Commerce, to which the public was especially invited, was a complete sell-out, evidencing local interest in the subject. There were 508 registrations.

### To Transform Plans Into Action

This event was especially timely in local application, for Oklahoma City is in the throes of a planning evolution which is familiar to students of the subject everywhere. Naturally the clinic provided a liberal education to local as well as visiting community leaders. Incidentally, it may be said that all sessions were well attended

*Oklahoma City's Civic Center, featuring County Building in center foreground, Municipal Building in center, and Municipal Auditorium (capacity 6,000) in background.*

and there were visitors from everywhere in Oklahoma and from several adjoining states.

The situation in Oklahoma City develops from going through the motions of planning, setting up a planning commission, board of adjustment and other machinery, and then not doing very much about it, except for one outstanding and most admirable achievement — the construction of a beautiful civic center where once there were railroad yards, in the heart of the city.

In other respects, after securing a good master plan about twenty years ago, the tendency was to occupy the time of the planning commission with spot zoning. Last winter, however, District Judge A. P. Van Meter almost threw out the whole zoning ordinance, issuing a warning that a continuance of spot zoning would inevitably lead to the charge of discrimination, and the courts would have no choice but to knock out the whole ordinance.

Without knowing of this crisis, Flavel Shurtleff, at the clinic, prophetically declared that "one of these days City X is going to have its zoning ordinance knocked out because it practices spot zoning." Since he is recognized as one of the foremost national authorities on the legal aspects of zoning, his statement made a profound impression.

For two years Harland Bartholomew of St. Louis has been working on a master plan for Oklahoma City, the next steps needed are to put it into effect through a resident engineer-planner, a citizens' committee, the existing city planning commission, a regional planning commission which includes county officials, and the city council. There was a flurry over the highway approach problem, because of varying opinions, but now the general master plan, including zoning, the major street system, transit, highway approaches and land use, seems to be ready to go. As with many other cities, the war industry situation and housing shortage have produced complications. It is now felt that Oklahoma City is stepping into a distinguished new era under competent and vigorous planning practice, and this clinic was exceedingly valuable to all participants.

# Mishawaka Sand-blasts Its Meters

A SAND-BLAST replaces the customary acid bath to clean meter cases at the Mishawaka, Ind., water works and is doing the job far more efficiently and giving superior results.

A. R. Klein, superintendent, got the idea by observing the performance of sandblast equipment of this type which was used to clean various foundry products, and decided that the same equipment ought to be adaptable to cleaning water meters and parts reconditioned in the meter shop.

In the last two months, during which Mishawaka has been experimenting with the sand-blast equipment, Superintendent Klein has learned a great deal about its operation. Its successful use depends on three factors:

1. Skill and judgment of the operator.
2. Type and size of the abrasives used.
3. The air pressure at which it is applied.

Tests of the meter parts after cleaning indicate that their surfaces are in better condition than after acid cleaning and that there is no erosion or distortion of the metal parts.

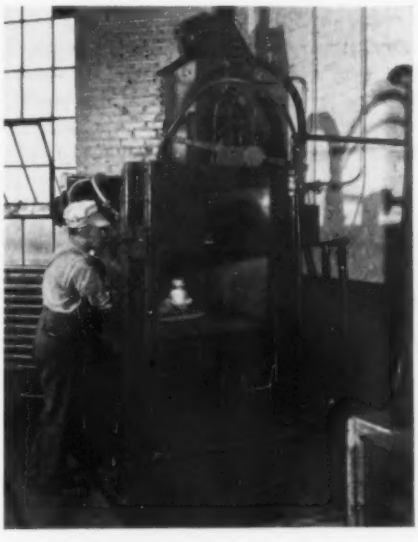
Superintendent Klein uses a sand-blast unit designed by the American Foundry Equipment Co., Mishawaka, Ind.

The operator, wears leather sleeves and rubber gloves which are permanently attached to the machine when using sandblasting equipment. Large meters and other heavy items are placed on the turntable and are rotated with one hand by the operator while he directs the blast nozzle with the other.

Small meters and such parts as measuring chambers may be held in the hands and rotated under the blast as the cleaning progresses. Gears, screws, and other small parts may be cleaned, a number at a time, by placing them in a perforated or screen basket.

A foot operated air valve is the only control required for the machine. The movement of the abrasive through the machine is continuous as long as the air is applied.

Superintendent Klein reports that the most satisfactory abrasive is a steel grit sized to pass a screen of 0.0055 inches and retained on a screen of 0.0033 inches. He now uses a 5/16-inch diameter blast nozzle with an air orifice 5/32 inches in diameter at an air pressure of 65-70 psi. The time required to clean the exterior of a 5/8-inch or 3/4-inch meter is approximately three minutes, and the measuring chamber and other parts take about the same amount of time.



PHOTOGRAPH COURTESY OF AMERICAN FOUNDRY EQUIPMENT CO., MISHAWAKA, IND.

*An operator, wearing leather sleeves and rubber gloves, demonstrates how the sand blast unit is used to clean the meter case.*

*Left to right are: a meter received from the manufacturer; an old meter after cleaning; an old iron body meter on which only the register cover was cleaned in the blast; and a similar meter as received from service. The various types of meter parts in the foreground were cleaned by sand blasting.*

# Municipal and Civic Public Relations

## Stop Those Water Department Nuisance Charges

***A practical suggestion for the improvement of water utility public relations discussed at the American Water Works Association annual conference.***

DO THOSE small, miscellaneous charges tacked onto the average water bill constitute any real protection to the water department or produce any real volume of revenue? E. E. Norman, Manager of the City Light and Water Utilities, Kalamazoo, Mich., says emphatically that they are of no value, that they produce little revenue, and that they only aggravate the customer. He made this statement in a paper delivered before the American Water Works Association annual meeting held recently in St. Louis. Here are some of the charges that he listed as unnecessary:

*The turn-on charge*—This charge, made when a customer is delinquent in paying his bill, actually is only an irritation to the customer. The experience at Kalamazoo indicated that its elimination did not result in any increase in delinquent bills.

*The turn-off charge*—This falls into the same category as the Turn-On Charge. Kalamazoo turns on or turns off water at the customer's request promptly and without charge.

*The trip charge*—This actually discourages prompt maintenance.

*Meter purchase*—no other utility indulges in this practice. There is no reason to make the customer purchase a device that he is not allowed to control.

*Meter repair charge*—No more logic exists justifying the meter repair charge than the meter purchase. The customer cannot help it if the meter fails and it generally is to his advantage to let it get out of adjustment.

*Hot water meter damage charge*—This actually results from customer negligence; however, Mr. Norman feels that it is sufficient to warn the customer. Reoccurrences of hot-water damage are rare.

*Repair of frozen meter charge*—This also may be chargeable to customer negligence; however, advice on how to correct this difficulty generally suffices.

*Meter rent charge*—An illogical charge. There is no reason for a customer to be forced to pay rent for an instrument that makes a charge against him.

*Meter test charge*—Kalamazoo will test a meter without charge at any time. However, it is required that the customer or his representative be present at the time of the test.

*Inspection of Service connections*—This generally is expensive to the customer, not only insofar as his charge is concerned but also in regard to delay that it creates to plumbers, contractors and others. Kalamazoo eliminates this by installing all service connections from the main to the meter.

*Service connection repair*—This is a very unfair charge and an irritation to the customer. Water departments should assume care and maintenance of all services and assume that the water is public property until it passes through the meter. Maintenance of service connections averages 60 cents per customer per year.

*Holding water bills as lien against property* is also considered a bad practice. This method of insuring payment of a water bill is difficult to justify. "If," says Mr. Norman, "we are not smart enough to collect the water bill when the tenant moves, why should we expect the property owner to do it?"

"These nuisance charges," Mr. Norman concluded, "are not worth what they cost, and they cost plenty"

## People and Planners Cooperate in Hamilton, Ontario

DURING the preparation of the Master Plan for Hamilton, Ontario,* special efforts were made to attract and hold public attention *while the plan was being developed.* Suggestions and opinions expressed by interested persons will be included in the final report to the city council, which is now being prepared, according to a letter to THE AMERICAN CITY from Diana Stevens of Town Planning Consultant, Ltd. This organization has been retained by the city of Hamilton for the preparation of the plan.

During the ten months' work on the project in this city of 180,000 population, public meetings were held with all agencies of the community representing commercial, industrial financial, social, cultural, labor, and other interests, Miss Stevens writes. This was done "in order to obtain an opinion regarding the citizens' requirements in the way of improvements to existing conditions and future developments." Meetings were also held in each ward with the zoning subcommittee to discuss area problems.

Next, meetings and radio round

* See page 85 of this issue.

*Citizens of Hamilton, Ontario, viewing the land use map of the city.*

tables were held to discuss proposed solutions. Spot announcements on the radio were used to notify the public of meetings and of the progress of the planning. Meanwhile newspaper coverage was complete, "nothing was decided or discussed behind closed doors."

The climax of the planning work was an exhibition held in a downtown department store at which the accompanying pictures were taken. The displays included maps, models, drawings, and photographs. Total attendance was about 13,000, or 1,100 a day. The local radio stations broadcast from the exhibition floor, giving visitors to the exhibition a chance to voice their opinions. One or two school groups came every day.

## Publicity at No Additional Expense

THE administration of the city of Montreal has found a means of securing favorable, and merited, publicity in other cities of North America which, unlike most publicity projects, costs the city no additional expense.

It is simply a question of seeing that all city employees, when they visit other cities, do their full share to uphold and enhance the reputation of the Canadian metropolis.

No official of the city of Montreal may go to any convention at the city's expense unless he undertakes to do something there which will definitely bring credit to the city. Montreal has for many years followed the principle of sending its technical officers to all conventions at which they are likely to learn something useful to the city from hearing papers and listening to discussions. Now, they must read papers and take part in discussions. In order to have Montreal pay the expenses of the delegation, it is stipulated that one at least must make a prepared contribution, either a paper or a statement or participation in a symposium. This paper is studied well in advance. As soon as it is known that the engineer, accountant, or technician is to attend the convention, he and his technical associates start drafting the paper or statement. Members of the city's staff help in preparing it. It is looked over by the city administration to see that no opportunity is lost for saying the good word about Montreal. Before the man leaves for the convention it is sure that his presentation will be a credit to the city.

If other men are going with him, they are expected to take every opportunity to make helpful contributions to symposia and discussions, thus doing honor to the city they represent.

As Councillor J. O. Asselin, chairman of the city Executive Committee explained, this costs the city nothing because the men have to attend these conventions anyhow.

A. E. PERKS.

### Telephone Tips from the Rochester Municipal Journal

An editorial in the *Rochester Municipal Journal* suggests the following rules for employees to bear in mind when answering the telephone:

Answer the phone promptly.

Have a pad handy for notes; if the person asked for is not there, offer to take a message for him.

Always answer courteously, giving the name of your department. In most cases your own name should be given too.

Hear the speaker out; don't interrupt to argue or defend.

Be personal and friendly in your conversation. It is much better to say "Mr. Smith" or "Mrs. Smith" then "Sir" or "Madam."

If you are interrupted during the conversation, apologize and turn the telephone aside, covering the transmitter.

Let the caller hang up first. Nothing is more irritating than to have the receiver banged in your ear in the midst of your conversation.

## New Film on Local Government in Action

THE Department of Internal Affairs of Pennsylvania announced recently that a new 16 mm. sound film "Pennsylvania Local Government in Action" is ready for distribution.

The movie, which was produced by the motion picture and recording studio of The Pennsylvania State College extension services, has been released to local government groups, civic organization, schools, and service clubs, free of charge. Frank Neusbaum, in charge of the studio, wrote the script and directed the film. Harold F. Alderfer, director of the Bureau of Municipal Affairs of the Department of Internal Affairs, also secretary of the Institute of Local Government at the college, served as technical adviser. William S. Livengood, Secretary of the Department, from whom the idea of the movie emanated, is the narrator. Secretary Livengood had the following points in mind when he proposed the project: To show day-by-day local government in action; to give an indication of some pressing current problems; to make citizens and officials aware of the important function of local government in the United States; and to help create a spirit of unity and common purpose among Pennsylvania local government officials.

The film runs about 22 minutes and includes sequences illustrating governmental organizations, playgrounds and parks, housing, traffic, road building, police and fire company activities, water works, sewage disposal plants, and numerous other aspects of government. The pictures were taken in several dozen towns throughout the state.

## *Trailers Taxable as Real Estate in Florida*

AUTOMOBILE TRAILERS used as permanent residences in Florida may now be taxed as real estate, according to a recent ruling of the state attorney general. The ruling is an outgrowth of the fact that more and more trailers are "settling down" and becoming houses. This is a nationwide phenomenon provoked by the housing shortage.

The National Association of Assessing Officers reports that trailers in Florida may now be classified for taxation as motor vehicles, personal property, or real estate, depending on their function.

Florida trailers primarily intended for mobile use attached to an automobile are required to carry motor vehicle license plates.

Trailers used primarily as living quarters but still not attached through integral utilities connections or foundations to the land are subject to taxation as personal property, but need no vehicle license.

Real property taxes are levied "where they are used as living quarters and are attached to the real estate in such a way as to have become a part thereof."

Magnitude of the Florida trailer problem is indicated by the fact that there are an estimated 10,000 trailers in Dade County (Miami) alone. At least one question of trailer taxation in Florida is yet to be answered: Will trailers located on land owned by the owner of the trailer be eligible for homestead exemptions under state laws? It is considered likely that such exemptions will be granted, though controversy may arise.

Despite the wide variation of state and municipal tax laws and definitions of real and personal property, the increasing use of trailers as permanent residences is tending to force reconsideration of their legal status throughout the nation.

# Wichita's Safety Program Brings National Recognition

***Safety education has put this Kansas city in high places in national traffic safety and fire prevention contests for sixteen years***

By BLISS ISELY

WHEN A city continues through sixteen years to win high places in national traffic safety and fire prevention contests, there must be a reason. Wichita, Kans., citizens say the reason is safety education.

This spring, returns from Wichita's education program, which begins with kindergarten children and covers all age groups, included the grand prize in the National Safety Council's traffic safety contest, first place among cities of 100,000 to 500,000 population in the American Automobile Association's pedestrian safety contest, first place among cities of 100,000 to 250,000 in the fire waste contest of the United States Chamber of Commerce, and thirtieth place in the fire prevention week contest of the National Board of Fire Underwriters. These awards were for the year 1945.

In the past 16 years Wichita has won a number of firsts in its population group in all four of the contests mentioned, and in 1944 the city won the national grand award in the Inter-Chamber Fire Waste Contest.

## Community-wide Program

Paradoxically, Wichita ranks at the top among cities of the United States for per capita possession of motor vehicles and in 1945 was rated by the U. S. Bureau of Labor Statistics as the nation's No. 1 war boom town.

*Friendly policemen teach youngsters all about safety precautions.*

For these reasons, traffic safety, and fire prevention records are no small achievements.

The entire community participates in the educational program, coordinated through the public safety and fire prevention committees of the Wichita Chamber of Commerce. These committees work with the schools, youth groups, civic organizations, industrial plants, newspapers, radio stations, and police, fire and other city departments.

*A police sergeant is the professor at the Saturday afternoon traffic school held for students of intermediate ages.*

Fire prevention is stressed twice a year—during fire prevention week and during clean-up week. School children prepare and present fire prevention radio programs, and every child has an opportunity to participate in some fire prevention activity at school. The children go home to inspect their own premises and help their parents remove fire hazards from attics and basements.

The street safety program began in the 1920's with the organization of the junior traffic patrols. Today the police supervise the patrols and policemen visit the schools and talk on safety. Older boys, semaphores in hand, direct traffic on main traffic streets as children go to and from school, and girls serve as monitors.

## Wichita Police Conduct Weekly Traffic School

For intermediate ages the police have a weekly traffic school on Saturdays. Any intermediate student may attend, and, in addition, children under 16 who violate traffic ordinances are sent for three lessons of instruction at the traffic school instead of being called into juvenile court.

High schools have traffic courts of their own and high school students arrested for traffic violations appear before the court conducted by students with a teacher and a policeman as observers. Upon conviction, the offenders are penalized by being sentenced to write essays up to 5,000 words on safety.

The police use the newspapers, radio, public address warnings on the street, and slogans to educate adults. The slogans, such as "Long Chances Shorten Lives," "Drive Safely. Wichita Hasn't a Child to Spare," appear on the front of buses and on street corners.

For safety-minded Wichita citizens winning contests is only an incident. They like to win, but what really counts is that, as a result of the safety program, many children are alive today and many homes, industrial plants, and commercial buildings have escaped fires. This to Wichita is worth more than any award.

# Street Problems Confronting Kansas City, Mo.

***Catching up with war-deferred street maintenance takes precedence over new expressway construction***

By K. K. KING
Director of Public Works
Kansas City, Mo.

KANSAS CITY. MO., needs new trafficways, new streets, new bridges and viaducts, to facilitate the movement of its great and growing volume of traffic. The life and prosperity of a city, as well as of a nation, depend on adequate transportation facilities. The proper location, the financing, and the construction of new facilities present immense problems. It is not these problems, however, that will be described in this article, but rather the problem of maintaining *existing* streets, trafficways and viaducts, which is of equal importance.

In Kansas City there are some 787 miles of streets and boulevards surfaced with the usual materials, including macadam, sheet asphalt, asphaltic concrete, cement concrete, brick and granite block. There are about 48 major viaducts and bridges, some maintained by the city.

There are many old streets which were not designed for modern, heavy, fast-moving traffic. They were not constructed according to modern standards even for light traffic, and are often not kept in repair and almost never sealed against entrance of water. There are, therefore, many streets needing reconstruction and resurfacing.

### Old Brick Pavements Need Asphaltic Concrete

There are still a good many miles of brick and granite block pavements. They were excellent fifty years ago, because traffic was comparatively very slow and light and well laid surfaces were not rough. Through the years they have worn and settled, so that now practically all are rough and uneven. They are still capable of carrying heavy modern traffic, but with considerable wear and tear on the modern vehicles, and at speeds below the capabilities of those vehicles so that a loss in traffic handling capacity results. Another fault is that they are not easily cleaned and flushed.

We consider that the cheapest way to obtain a good smooth riding surface is to repair any defective base and resurface the entire pavement with asphaltic concrete. We believe the only problem on these streets is financing. Some of these streets have been resurfaced, and have resulted in lowered maintenance costs, increased traffic capacity, and more modern appearance.

### Subgrade Failures

Kansas City also has some 200 miles of concrete pavement, a great portion of which is in bad condition. At one period of Kansas City's development, before present concrete standards were established, their subgrades apparently weren't too well prepared, and miles and miles of them are now broken and uneven. The only remedy is extensive repairs and resurfacing with a suitable leveling material. The bases now appear to be generally stabilized, so that resurfacing with asphaltic concrete will probably be the most economical method of providing a surface of reasonable life expectancy, although we have done short sections and may do some more using a cold mix asphaltic leveling and surfacing material. Use of the cold mix will result in more maintenance later than would be required if we use the hot asphaltic concrete mix.

Among the oldest surfaces in Kansas City are those of sheet asphalt of which there are more than 100 miles. Many of these are 40 years old or more, and probably very few are less than 25. They are cracked and lifeless where they have not been treated. Where these surfaces are rough or not bonded to the base, it will be necessary to strip off the old sheet asphalt and replace with asphaltic concrete or sheet asphalt. Where use is not heavy and the surface is reasonably even and still adhering to the base, although porous or somewhat cracked, they are being sealed with liquid asphalt and covered with aggregate as will be described later.

### Macadam to Be Resealed

The city has much macadam pavement, the total of macadam and sheet asphalt being more than 300 miles.

*Before resurfacing, this street was rough and badly chopped up by a pair of abandoned street car tracks.*

***This is the way it looks after resurfacing. It is wide, smooth, attractive with** many years of active service ahead.*

*All that this street required was a resurfacing with cold mix asphalt covered with a seal coat of asphalt and gravel.*

*This rough, badly deteriorated residential street scarcely is in keeping with the attractive trim homes that abut it.*

The macadam is not on the average as old as the sheet asphalt, but much of it is 20 or more years old. For many years neither the macadam nor the sheet asphalt was properly maintained. Repairs consisted mainly of plugging holes in the surface with either cold or hot mixed asphalt material. As the aging pavements were not sealed against the entrance of water, they gradually became porous through asphalt deficiency and the repair process was never-ending and not of permanent value. Holes were patched and streets repaired, and in a matter of weeks or even days the process needed to be repeated. When large numbers of men were employed it was possible to keep the chuck holes filled most of the time, but it was an expensive and wasteful method, and left rough and pitted streets even where large holes were prevented or repaired as they formed.

## "Matcoating" Program Resumed During War

A considerable start on trafficway improvements was made in 1940 and 1941. Repaving widening was begun, using trafficway bond funds for material, and labor furnished largely by WPA. Then the war intervened, and it was not until 1944 that a beginning was made again on the improvement of both trafficways and residential streets. In 1944 the city began maintenance and repair methods that had not been used extensively at any time in the past. The beginning was made on bituminous type streets, macadam and sheet asphalt, and about a third (approximately 110 miles) of these streets were repaired and then sealed with liquid asphalt and cover aggregate in 1944. St. Louis called this "matcoating," and began it before Kansas City, and has used this method more extensively. All engineers concerned with maintenance work are perfectly familiar with it, but it may be of interest to have a description of the particular method and cost in Kansas City.

We have only made a beginning in Kansas City. The method, which will be described briefly, and the unit costs are those we used during the summer of 1945.

Where few repairs to the surface are needed, and the riding surface is fairly even, the repairs are first made and the small depressions leveled. To do this, faulty areas are removed, edges squared up, and a tack coat either of RC-1, or a rapid curing emulsion is applied. After this the holes are filled, leveled and rolled, with hot or cold plant mix asphalt, depending on whether the pavement is asphalt or macadam. Skim patches are used to level depressions, placed in the same manner. The street is then thoroughly flushed, and is ready for the liquid asphalt and over aggregate.

Where the surface needs many repairs, or is uneven and needs shaping to restore riding qualities, loose material is removed, and the street is cleaned. A tack coat of RC-1 or rapid curing emulsion is applied over the whole surface. Then cold mix material is dumped from trucks and spread and shaped by a blade grader. It is then rolled by a ten-ton roller and allowed to cure for at least ten days before the application of the seal coat.

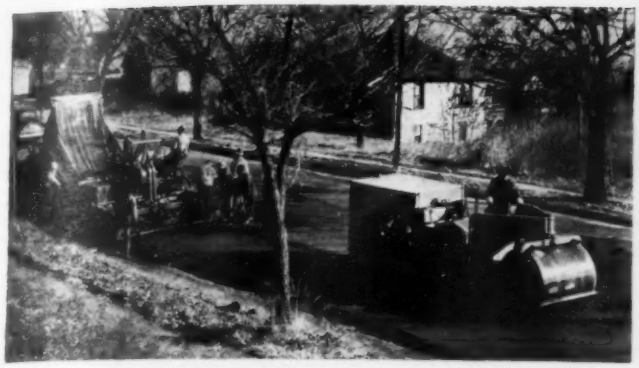
## Matcoating Costs

In 1945, 548,500 square yards were treated in this manner, with an average application of 48 pounds per square yard at a cost of 21.35 cents per square yard. For the spot patching previously described the total pavement area was 1,292,500 square yards and the cost of 3.23 cents per square yard.

For the seal coat, the average application was 0.25 gallons per square yard (specifications calling for .2 to .4 as required) using 150-200 penetration asphalt cement for the most part but some RC-3. The cover aggregate was required to be placed within thirty minutes and rolled with a ten-ton or multiple wheeled roller and was either gravel or Joplin Chat, all passing ⅜-inch, 95% passing ¼-inch and not more than 15% passing 10 mesh. The aggregate was dried to have a moisture content not to exceed 1%. The average application was 20 pounds per square yard, with some surplus later picked up. Gravel thrown out by traffic, which was allowed on immediately, was swept back as long as practicable, and "bleeding" blotted by sand. The cost per square yard for the application and manipulation of the seal coat was 7.03 cents per square yard for 1,762,500 square yards in 1945. This covered about 110 miles of surface. The average cost per square yard for all spot patching, blade patching and seal coating was 15.68 cents.

## Sealing Should Be Repeated

These methods have been very successful in preventing the formation of chuck holes, and in improving riding qualities where blade shaping was used. We do believe that some of the streets sealed two years ago will need resealing soon, because on some streets not enough patching was done. This happened because defects were small, although often numerous, and these pitted places were not always entirely free of dirt which in some instances caused breaking of the seal.



*The application of the cold-mix asphalt surfacing is simple. It only requires the use in this case, of a Caterpillar patrol and a Buffalo-Springfield roller.*

*To lay the asphaltic concrete, the Kansas City Street Department normally uses a Barber-Greene paver, laying the surfacing in 10-foot widths.*

There has been little evidence of it so far, but a few holes have formed. We believe the second sealing of these streets, and later of all the others, will put them in fine condition. In other words, we believe a second sealing at not too great an interval of time will do much more than the first to restore and save the surfaces.

### Changes Anticipated

In the interest of further economy and improvement we expect to make some changes in methods and materials this year. We expect to specify a coarser aggregate, conforming to Missouri State Highway Specifications No. 10 or No. 11, which result in 100% passing ½-inch, with 95% to 100% passing ⅜-inch, and 0% to 5% passing 10 mesh for the No. 10 specification; or 85 to 100% passing ⅜-inch, and 0 to 15% passing 10 mesh for the No. 11 specification. We plan to use an additive to either 150-200 penetration AC or to MC-5 to increase the affinity for moist aggregate, and omit last year's requirement for drying the aggregate below its normal moisture content on delivery. We also plan to use relatively less of the aggregate described, using more sand for blotting, and believe it will improve the seal. We have done some laboratory and test work this year by this method, and believe it will be satisfactory and economical.

### Machine Paver for Asphaltic Concrete

It has been mentioned previously that we have done some resurfacing of brick, concrete and other pavements using hot mix asphaltic concrete. The base is first repaired wherever defective, then one or more leveling and binder courses is applied, followed by a finishing course, all placed by an asphalt laying and surfacing machine. Usually the total thickness is from 1½ to 4 inches, depending on the condition of the base both as to strength and evenness. Each course is rolled using a ten-ton roller, and we require that no course be thicker than 1½-inch, to secure maximum compaction.

About fifteen miles of pavement have been so resurfaced in the past two years, with excellent results. In the year 1945, 6.14 miles were laid, or 182,437 square yards, with an average thickness of about 2¼ inches, this being 239 pounds per yard, at an average cost of 76 cents per square yard.

There are, of course, many city blocks of pavement where the only correction possible to put them in first class condition is complete removal and reconstruction of the pavement. However, good methods of repair, sealing and resurfacing will serve excellently for most surfaces. Repeated sealing will undoubtedly prolong the life of most bituminous type residential streets, and if they are first repaired and leveled they should serve excellently. Reconstruction of the great majority of these streets could not be justified when economical surface repairs can be made so readily. The broken concrete residential streets will cost more for restoration, but resurfacing as described will put them in amply good condition.

It has been estimated that the described type of reconditioning of all existing streets may be substantially completed for $5,000,000, although this may not be sufficient to include reconstruction of some streets whose condition is too bad. The reduction in cost of maintenance, resulting from their being placed in good condition, should go far toward carrying the cost of the initial investment. Smooth streets would not only be a pleasure to drive upon, but would reduce cost of operation of all motor vehicles as well as street cleaning and maintenance costs. It is the hope of the writer that the finances will be provided, the work authorized, and that Kansas City will go forward in meeting completely and comprehensively the street problems that confront it.

## Surplus Property Act Criticized

THE BOARD OF DIRECTORS of the Associated Equipment Distributors at their recent semi-annual meeting adopted a resolution charging that "the Surplus Property Act of 1944 is proving to be an ineffectual and time-consuming means for disposing of surplus personal property of the Government and getting it into the hands of consumers." It charged that cumbersome procedures required by law, and the need for satisfying various groups of priority and preference holders form interminable delays. Also that the system of priorities and preferences established by the Act leads to exploitation of priority holders, and puts a premium on "fraud and dishonesty."

Widespread dissatisfaction throughout the construction machinery industry with surplus disposal methods prompted F. B. McBath, President of A.E.D. to invite the organization's Committee on Disposal of Government Surplus to Chicago for a report on their findings during the past six months. This report and the succeeding conferences led to the adoption of this resolution.

The resolution recommended elimination for an interim period of at least one year of all priorities, preferences and special privileges, disposal of surplus personal property on the open market at public spot sales and at highest bid prices, sales to be advertised well in advance with utilization of normal channels of trade and commerce. Further recommendations were that goods be sold in small lots; that there be no negotiated transactions; that all surplus personal property be sold to obtain maximum value regardless of other provisions of the Act; and that where large inventories of surplus are concentrated in a small area sales be handled on a national basis in order to get a wide and equitable distribution.

# Atlanta's Smallest Sewage Treatment Plant

***The 2-mgd Egan Park plant retains clean-cut features and excellence of design in furnishing secondary treatment***

*Two standard trickling filters flank the settling tanks used by the Egan Park plants.*

NESTLED IN the outskirts of Atlanta lies Egan Park—this city's newest and smallest addition to its battery of stout sewage treatment plants. Built to serve Atlanta's Candler Field airport, it has a nominal capacity of 2 mgd and actually treats a flow amounting to no more than 1 mgd. This is small when compared with the Clayton plant's 42 mgd, the South River plant's 16 mgd, Entrenchment's 14 mgd, and Utoy's 12 mgd.

### Simple, Practical Design

However, the simple, practical design of the Egan Park plant draws attention to the value of straight-forward features when making this sort of construction. The plant furnishes secondary treatment by the use of trickling filters and is designed in the manner of the popular separate sludge system.

To supply this treatment, the plant receives the sewage through a 24-inch line and gives it its first stage of treatment by the use of a hand-cleaned bar screen. The bars are 5/16-inch in thickness and are laid 1½ inches on center. The overall dimensions of the bars are 4 by 15 feet.

The sewage then passes through a Parshall flume with a 12-inch throat and enters the two primary tanks by way of a 24-inch line. On its way to the primary tanks, it passes through a junction box that has been supplied to care for future expansion of the plant if necessary.

The primary tanks measure 20 by 68 by 9 feet deep and allow the conventional 2½-hour detention at design flow. Link-Belt longitudinal collectors gather the sludge that settles out in this step of the process which removes approximately 41% of the 5-day BOD and 77% of the suspended solids.

### Visual Examination Possible

The operator can exercise close control over sludge withdrawals by means of a sludge collection pit through which the tanks operate, controlling the sludge withdrawal through the action of a telescoping valve in the pit. This arrangement makes visual examination of the sludge being withdrawn possible. The sludge goes through a 4-inch line to the two digesters, with their transfer being made by a pair of PFT plunger pumps.

The two digestion tanks measuring 45 feet in diameter by 20 feet deep, are hopper-bottomed and equipped with PFT floating covers. These tanks can be operated either in series or in parallel. Present operation uses the series method with the secondary tank being used primarily for storage. Overall digestion capacity is approximately 3 cubic feet per capita; however, most of the digestion, of course, takes place in the primary tank.

The digested sludge goes to a pair of sand drying beds measuring 175 by 90 feet and furnishing ¾ square feet of drying area per capita. The supernatant from the digesters goes to the primary settling tank through a 4-inch line.

The settled sewage leaves the primary tanks and goes to either of two Infilco dosing siphons measuring 12 by 10 feet with a water depth of 2 feet. These siphons serve rotary trickling filters 136 feet in diameter with a 6-foot rock depth that bring the BOD and suspended solids reductions to 92%. The tanks have provision for flooding and overflowing if required for psycoda fly control.

### Secondary Settling Tanks

The sewage leaving the filters then goes to a pair of secondary settling tanks with dimensions exactly the same as the primaries and similarly equipped. The sludge can be pumped either to the digesters or back to the bar screens. Present operation dictates the latter process since the thin secondary sludge causes a certain amount of difficulty in the digesters.

The plant was designed by Robert and Co., Atlanta, consulting engineers. It was built at a cost of $178,000 with the assitsance of a 35% grant from FWA. The plant is operated under the direction of W. E. Quarles, general superintendent of all sewage treatment plants in Atlanta. S. D. Love is the operator.

# How to Make a Fly Control Program Work

By **R. W. SIMPSON**
Sanitary Engineer
Gilbert Associates, Inc.
Reading, Pa.

IN THE WAKE of the house fly may be found such diseases as typhoid fever, dysentery, diarrhea, and possibly poliomylelitis.

In order to plan a program for the control of the common house fly on a municipal basis, one must first be familiar with the entomology of the fly. Briefly, the fly develops by a process known as complete metamorphosis. The adult female of the species lays from 100 to 150 eggs at a time, laying them in such places as manure piles, decomposing restaurant garbage or other points of filth. The egg, using the moisture from its surroundings and influenced by the heat of fermentation due to decay, hatches in 12 hours to form a larvae, or more commonly a maggot. This active grayish little worm feeds and thrives on the dirt surrounding it. In about 5 days, the larvae burrows into the breeding media and becomes dormant. During this pupa stage, the adult takes shape inside the pupal sack. In about 4 days, the pupal sack erupts and the adult emerges.

How does the adult fly spread disease? In two ways. First and most commonly, by carrying bacteria on its feet from a contaminated source to food or food receptacles. And secondly, through its method of feeding. The house fly does not feed on solid food but spews saliva from its mouth onto the material to be eaten. This dissolves the food, allowing the fly to suck the food into its stomach. The fly feeds on contaminated material, as well as food for human consumption, thereby spreading disease.

## How to Control Breeding Areas

The first and most logical control measure is elimination of breeding places. In municipalities, the most common breeding places are dumps, stockyards, compost piles, unsanitary restaurants, garbage disposal points and sometimes the city zoo.

The dumps require good housekeeping. Inspect them regularly during the warm weather to locate fly breeding. Spray with an insecticide any area showing flies, pupal sacks or larvae burrowed beneath the surface. Diesel or #2 fuel oil are excellent larvacides and kill the larvae and pupa. The addition of ½ to 1% DDT is helpful in this case, but DDT alone is not sufficient.

Stock yards, with the inevitable manure and compost piles prove an excellent breeding area for flies. The city, however, must get the cooperation of management to assure regular cleaning of pens. The manure stock piles should be turned over every 10 days to expose any larvae to the sun light, thereby killing them. Spraying the compost piles with insecticide is not too efficient, since the insecticide does not penetrate the pile deep enough to reach the larvae. Where manure is spread in a thin layer over a large area, spraying of the area with diesel oil containing ½ to 1% DDT is effective, as in the case with dumps.

## Recommend Use of Covered Garbage Trucks

Prompt and thorough garbage collection in tight containers using trucks with covered bodies will go a long way toward eliminating spilled garbage that will rot and offer an ideal breeding area for the house fly. One must be particularly careful around restaurants, public markets, and other areas that produce large amounts of garbage.

It is not always possible to control the house fly by preventing its breeding, so we must go after the adult fly, which requires more material and men.

There are available on the market today some mechanical devices such as electrical fly traps and charged screens that can be used advantageously in homes, restaurants, butcher shops, and markets. Fly traps, made of screen wire and placed over swill barrels or bait boxes also have been used extensively with some success. Sticky paper and liquid poisons also are a means of catching and killing adult flies. These methods, useful for domestic purposes, nevertheless are not sufficiently effective on a large scale.

A municipal program should use liquid insecticides. Those containing pyrethrum have a time-honored record of effectiveness. The insecticide is a respiratory irritant, killing the flies when they breathe the air. It does not produce a residual or contact kill. In a closed room such an insecticide gives efficient results.

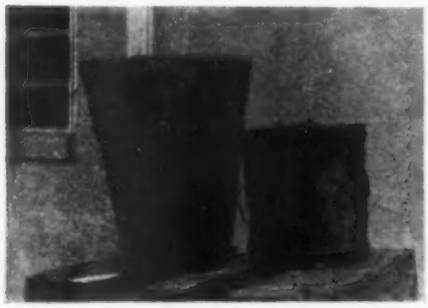
However, pyrethrum does not work effectively out of doors, and we must turn to the new insecticide, DDT, that kills by contact with the feet of the fly, as well as by respiration. DDT can be sprayed on a surface and when a fly lights there later, paralysis followed by death results.

In a large scale municipal fly control campaign, DDT can be used advantageously. In planning such a

*A combination of DDT and fuel oil sprayed on manure piles, stockyards, zoos, and similar places gives excellent results.*

*Knapsack sprayers also prove their worth in more inaccessible areas.*

*Open garbage trucks are another point of fly concentration which need attention by a spray of DDT.*



*Poor garbage containers are a natural attraction for flies.*

*Here are some of the results. These flies are dead.*

campaign, various methods of attack are possible.

To attack effectively with DDT, first map known breeding areas, as well as treated areas, then draw plans to cover the selected areas thoroughly.

Next spray this material on all surfaces where the flies may light. The crystals remaining on these surfaces will be effective fly killers for long periods.

The DDT can be used in several forms. Experience has demonstrated that a 5% solution is most effective. Eight ounces of commercial DDT dissolved in one gallon of kerosene makes an effective 5% spray. Where the work is to be done on a large scale, the cost of kerosene can be saved by using an emulsion. In this case, a concentrate is first made by dissolving 4 pounds of DDT per gallon of xylene. An emulsifying agent, such as triton X-100, duponol, or sodium lauryl sulfate is then added, 8 ounces per gallon. This concentrate can then be diluted with sufficient water to make an emulsion of any desired strength. A dilution of one part concentrate with ten parts of water makes a 5% emulsion. The 5% solution or emulsion should be applied at the rate of approximately one gallon per 1,000 square feet of surface.

### Methods of Applying DDT

In applying the solution or emulsion of DDT, many types of equipment can be used. Knapsack sprayers, of the common garden variety, can be used advantageously.

In a large scale fly control campaign, spraying of garbage collection trucks is advantageous as these vehicles travel through the city, and tend to spread the flies around.

To cover large areas in short periods of time, tank trucks give the most efficient results. Most cities have tree spraying equipment used in the spring for spraying fungicides. Such equipment can be readily used for this purpose. The large tank allows for mixing large batches of material, while the spray guns with flexible rubber hose allow sufficient movement of the operator. A truck of this type was used at Denver, Colo. Army decontaminating units, truck-mounted, are excellent for this purpose. These units are now available from surplus.

### Do Flies Spread Polio?

*A good many differing opinions exist regarding the spread of polio. The difficulty that scientists have in isolating and identifying this virus makes exact confirmation a problem. Nevertheless the experience at Denver last summer, while not conclusive, at least is significant and indicates that flies are a factor.*

*During the fall of 1945 Denver inaugurated an intensive program for controlling polio. The records showed a preponderance of cases in areas adjacent to streams passing through Denver and in the stockyard area and the city dumps, all of which were troubled by the fly nuisance.*

*During this same period Denver experimented with a fly-control program concentrating on these fly-infested areas. The program was conducted through the cooperation of the Army and the U. S. Public Health Service and Mr. Simpson took an active part.*

*The results showed no recurrences of polio in the areas sprayed as part of the fly-control program.*

The author wishes to acknowledge the assistance of A. T. Rossano, Jr., Capt., U.S.P.H.S. in furnishing the pictures, and providing comments on this paper.

# Residential Electric Rates

DATA for municipally owned systems serving cities over 50,000 population listed in ascending order on the basis of the typical bill. Where two utilities serve a community, the community is listed once if the bills for both are alike, twice if the bills for the two utilities differ. Compiled by Burns & McDonnell Engineering Co., Kansas City, Mo., from Federal Power Comm. report.

| 25 KWH | | 100 KWH | | 250 KWH | |
|---|---|---|---|---|---|
| Chattanooga, Tenn. | $ .75 | Tacoma, Wash. | $1.70 | Tacoma, Wash. | $3.20 |
| Hamilton, Ohio (A) | .75 | Chattanooga, Tenn. | 2.50 | Glendale, Calif. | 4.50 |
| Knoxville, Tenn. | .75 | Glendale, Calif. | 2.50 | Lincoln, Nebr. (A) | 4.69 |
| Memphis, Tenn. | .75 | Knoxville, Tenn. | 2.50 | Springfield, Ill. (A) | 4.80 |
| Nashville, Tenn. | .75 | Memphis, Tenn. | 2.50 | Lincoln, Nebr. (A) | 4.94 |
| Springfield, Mo. | .75 | Nashville, Tenn. | 2.50 | Kansas City, Kans. | 4.95 |
| Cleveland, Ohio (A) | .80 | Lincoln, Nebr. (A) | 2.60 | Los Angeles, Calif. | 4.99 |
| Seattle, Wash. (A) | .80 | Hamilton, Ohio (A) | 2.62 | Chattanooga, Tenn. | 5.00 |
| Fort Wayne, Ind. (A) | .87 | Cleveland, Ohio (A) | 2.65 | Knoxville, Tenn. | 5.00 |
| Lansing, Mich. | .95 | Lansing, Mich. | 2.70 | Memphis, Tenn. | 5.00 |
| Tacoma, Wash. | .95 | Seattle, Wash. (A) | 2.72 | Nashville, Tenn. | 5.00 |
| Columbus, Ohio (A) | .98 | Lincoln, Nebr. (A) | 2.74 | Seattle, Wash. (A) | 5.10 |
| Glendale, Calif. | 1.00 | Kansas City, Kans. | 2.80 | Hamilton, Ohio (A) | 5.25 |
| Holyoke, Mass. | 1.00 | Los Angeles, Calif. | 2.86 | Pasadena, Calif. | 5.25 |
| Kalamazoo, Mich. (A) | 1.00 | Kalamazoo, Mich. (A) | 3.00 | Cleveland, Ohio (A) | 5.40 |
| San Juan, P. R. | 1.00 | Pasadena, Calif. | 3.00 | Lansing, Mich. | 5.45 |
| Lincoln, Nebr. (A) | 1.03 | Springfield, Mo. | 3.00 | Kalamazoo, Mich. (A) | 5.75 |
| Los Angeles, Calif. | 1.03 | Springfield, Ill. (A) | 3.02 | Ponce, P. R. | 5.78 |
| Lincoln, Nebr. (A) | 1.08 | Austin, Texas | 3.30 | Fort Wayne, Ind. (A) | 5.90 |
| Pasadena, Calif. | 1.13 | Columbus, Ohio (A) | 3.40 | Columbus, Ohio (A) | 6.25 |
| Austin, Texas | 1.25 | San Juan, P. R. | 3.48 | San Antonio, Texas | 6.26 |
| Ponce, P. R. | 1.25 | Fort Wayne, Ind. (A) | 3.50 | Austin, Texas | 6.30 |
| San Antonio, Texas | 1.25 | Ponce, P. R. | 3.55 | Mayaguez, P. R. | 6.53 |
| Springfield, Ill. (A) | 1.25 | San Antonio, Texas | 3.64 | San Juan, P. R. | 6.85 |
| Kansas City, Kans. | 1.30 | Holyoke, Mass. | 3.75 | U. S. AVERAGE | 6.89 |
| U. S. AVERAGE | 1.32 | U. S. AVERAGE | 3.76 | Jacksonville, Fla. | 7.60 |
| Mayaguez, P. R. | 1.33 | Mayaguez, P. R. | 3.98 | Holyoke, Mass. | 8.00 |
| Jacksonville, Fla. | 1.50 | Jacksonville, Fla. | 4.60 | | |

(A) Served by both publicly and privately owned utility.

# Crawfordsville Airport—Small and Sound

***Crawfordsville, Ind., builds an airport to serve its own needs and does not try to compete with Idlewild.***

By **EARL A. SNYDER**

THE EXPERIENCE of Crawfordsville, Ind., and Chester C. ("Chet") Hill might have been the experience of any small town wanting an airport and any released army or navy flier wanting a peacetime job in aviation.

Crawfordsville is a small, midwestern community with a population of 1000. It is the county seat of Montgomery County, Ind., and is nestled comfortably in the midst of a rich farming countryside. The city owns its electric light plant, and though the rates charged are low, the income from the light plant is substantial. At times it is almost embarrassing to city officials to explain the huge surplus but it is popularly known that any sound program for civic improvement or betterment of the general welfare is assured of adequate financial backing in Crawfordsville.

## Why Airport Was Desired

The original impetus for the building of the airport was the patriotic desire of the city fathers to provide a place for returning servicemen to fly. It was also felt that a modern, up-to-date city ought to have an airport, moreover business men and other air-minded citizens wanted an airfield and an opportunity to learn to fly.

The site chosen and purchased by the city is 160 acres of rolling farmland four and one-half miles from Crawfordsville. It is level enough so that without any grading or rolling whatsoever planes can be taxied, taken off, and landed. The land had on it a house and a large barn. These were the facilities that were turned over to Hill.

"Chet" Hill, a typical, business-minded aviation enthusiast—a shy, bespectacled, sandy-haired flier—was chosen as manager of the airport. He is 34 years old, and has eight years and 4,000 hours of flying behind him.

"I've done a little bit of everything," Hill relates. "After I got out of college, I taught in a high school for a few years and then I got a job as an investigator in the U. S. District Attorney's office. But all the time I was building hours toward my commercial pilot's license. When the war came along and a call went out for civilians with pilot time for light-plane instructors for the army I was ready to get my commercial license. I went to work at a college that had contracted for pre-aviation cadet training. When the air training program was cut back, I decided to get into what I had always wanted—a practical, civic-serviceable, municipal airport in a medium sized city. I first settled at Lafayette, Ind., but conditions there were not quite what I wanted; and when I was approached by Crawfordsville officials to become the operator of its newly founded municipal airport, I considered it an opportunity with a good future."

## Field Operated as a Public Service

Hill and the city of Crawfordsville entered into a contract last year by which the city was to provide and maintain the field and its facilities and Hill was to furnish three light airplanes and qualified instructors. The city provides one laborer and equipment needed to take care of the field and takes a small percentage of the income which Hill derives from instruction, carrying passengers, and charter trips.

"We don't intend or expect to make money from the airport," says City Engineer L. B. Clore, who is charged with the active responsibility of the airport. "It is a public service similar to the city park or the municipal golf course. Our city has ample funds to do what is needed at any time it is needed. We have the jump on most of the other cities in Indiana. When the last legislature passed the airport governing law it forgot to provide for a bond issue to finance the establishment of airports. As a consequence a city that doesn't have considerable cash on hand can't get one started until the legislature meets at the next session and inserts the bond issue clause, which it presumably will do.

"As rapidly as materials and labor become available we are going to erect permanent, all-steel, prefabricated T-type hangars with concrete floors, a small administration building, and a modern maintenance shop. To meet a need for temporary hangar space during the coming winter months we are erecting a temporary galvanized iron T-type hangar, and we may remodel the barn into a shop. We have the electricity lines up to the edge of the landing field and we are waiting for the telephone company to get their lines up that far so we can put them all in one trench. When that is done we'll have a lighted field. Our runways will be sod but we intend to make them the best of that type. In fact, if the people of Crawfordsville want it, we'll have one of the finest Class II airports in the country."

*A barn serves as a hangar and tool shed for Crawfordsville pending the time when increased activities justify more pretentious facilities.*

*How the reclaimed dam that is furnishing Tampa's supply of water now looks.*

# Tampa Rebuilds Water Supply Dam— Renovates Filter Plant

**By J. S. LONG, Superintendent Water Department, Tampa, Fla.**

TAMPA HAS had to rebuild a dam across the Hillsborough River, which washed out some years ago, and rehabilitate its filter plant to meet the increased demand for water that had arisen during the war years. However, since the end of the war the demand has not decreased, as we had expected, and we will soon increase our pumping and filter capacity by 50%. Plans and specifications are being drawn by our engineers, Robert and Company of Atlanta, Ga., for the construction of four new filters; two Accelators; lime handling and feeding equipment; a new 35,000-lb. boiler; two new steam-driven turbine centrifugal pumps, one a low-lift and the other a high-lift, of 20 mgd capacity; mechanical raw water screens; and several smaller items.

The dam that we have rehabilitated was washed out in September of 1933. At that time it belonged to the power company. About a year ago the city purchased the site, plus the old dam, from the power company and constructed a new concrete dam with two flood gates. One of these gates is automatically controlled by the elevation of the lake behind the dam, whereas the other flood gate, at the opposite end of the dam, is manually controlled. By building the dam, we raised the elevation of the lake and thus increased the capacity and efficiency of our low-lift, or raw-water pumps by decreasing the suction head. The manually-operated gate was one that was formerly installed at the old dam. We rehabilitated it and left it in its old position. The automatic gate was purchased new from the Hardesty Division, Armco Drainage & Metal Products Co., Denver, Colo.

When the water works pumping station was built in 1923, it enjoyed the benefits of the power company's lake as a raw water supply, but in 1933, when the dam washed out, the lake dropped to an elevation where raw-water pumps could not pick up the water. At that time we had to install two DeLaval centrifugal booster pumps to pump the water from the lower elevation in the river into our screen well to be picked up by regular raw water pumps. The booster pumps were operated by hydraulic motors, which took the supply of high pressure finished water from our force main as it left the pump station. When the energy of this raw water was used, it was sent back into the clear well. We used hydraulically-driven pumps because we did not have an uninterrupted supply of electric power on which we could rely.

At the filter plant we built a new concrete clear well, to supplement the existing one. The new clear well is underground and has a capacity of 2,000,000 gallons. The old clear well, which had only a capacity of 500,000 gallons, was wholly inadequate for our increased pumping demand.

We installed Graver mechanical mixers in our mixing basins in the hope that we could speed up the reaction of the chemicals which would give us greater capacity. These are the type that operate by motor and reduction gear from above. However, although they did reduce the cost of chemicals they produced certain complications. When we used alum for the coagulant the floc had a tendency to break up, caused possibly by the speed with which water passes through the basins. We get much better results when we use lime; the mixers thoroughly combine the lime with the water and produce a much improved reaction.

Our water is difficult to treat, changing from hard to soft and coloring quickly, following a rain on the watershed. Consequently, we are forced to change operations equally fast to fit raw water conditions.

A new Wallace & Tiernan 3,000-lb. capacity chlorinator has been installed, in addition to our original smaller chlorinator, and we now use chlorine in ton containers. The larger chlori-

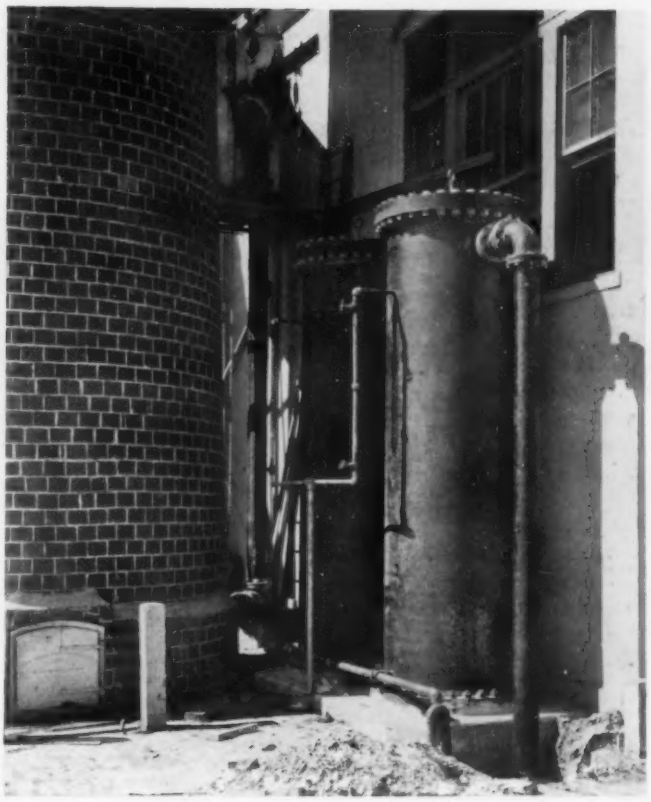
nator was installed for pre-chlorination of the raw water; something we did not do formerly. We also use our regular post-chlorination. The raw water is chlorinated to the breakpoint, except for a short time in the middle of the summer when the demand of the raw water for chlorine is extremely high. At that time the demand is actually a little over the capacity of the chlorinator due to heavy vegetable coloring matter in the raw water. The pre-chlorination of the raw water has worked out very satisfactorily. It oxidizes a great deal of the vegetable coloring matter and it saves much of our alum dosage and cost. Since using pre-chlorination, our raw water samples taken throughout the distribution system are far better than before. The count is extremely low, and very few samples show any 48-hr. gas. We post-chlorinate the effluent at the filter plant to a residual of 1 ppm.

We also rebuilt our eight filters by installing a new under-drain system in each and stepped up the Simplex hydraulic controllers so that now they will handle a filter rate of 3 gallons per minute per square foot of filter surface, whereas the original filters were designed for 2 gallons per square foot. This has increased our Filter Plant capacity about 50%, but it is still not enough.

We used Wagner concrete blocks and made them ourselves at the plant with machines furnished by Infilco, Inc. The cast iron laterals were made by the McWane Cast Iron Pipe Company.

### New Carbon Dioxide Plant

We installed a new carbon dioxide plant and whereas we formerly obtained carbon dioxide for re-carbonation by burning coke in a furnace, we now obtain it from the flue gases in our boiler-room. We connected a cast iron pipe line to the flue, and ran the gas through two scrubbers and drew it to the filter plant, about 200 feet away, by two rotary compressors. This system has been working quite satisfactorily and is saving a great deal of expense in coke, in addition to being far cleaner than the former system. The new scrubbers, designed by Robert and Company, consist of two 36" Mono-Cast pipes with hat flanges for inlets and outlets. The flanges at the top and bottom are securely bolted to make the outfit air-tight. Since the temperature of the gas runs from 600° to 800°F., we had the flanges on the 36" pipes brazed so that the joints would remain tight under these temperatures. The carbon dioxide gas enters at the bottom, works its way up through the clay scrubber tile and then proceeds through the second scrubber in the same manner. A stream of water sprays over the top of the tile constantly and drains off in the opposite direction to the flow of the gas. The cast iron pipe used, for pipe line, and for the scrubbers, was manufactured by the American Cast Iron Pipe Company.



*The two scrubbers are used to process the flue gas so that its carbon dioxide can be used for recarbonating the water.*

At the Pump Station we installed three new Babcock & Wilcox oil burners, a carbon dioxide gage for each of the three boilers, as well as other boiler-room accessories for more easy handling of the boilers, and we have found that we have improved our efficiency on oil consumption considerably. By the installation of the new boiler-room equipment, we find that it has raised our combustion to where we can keep the carbon dioxide content from the flue gases to around 13%, which very materially increases our efficiency in recarbonation at the filter plant.

## Housing for Plant Personnel

ACTING TO RELIEVE the housing shortage in Hogansville, Ga., and Winnsboro, S. C., the United States Rubber Company announced plans last month for the construction of 131 houses and apartments for plant personnel in the Georgia and South Carolina communities.

The program calls for 60 houses in Hogansville and 71 houses and apartments in Winnsboro. All are expected to be ready for occupancy in September. Construction will be under the supervision of J. A. Jones Construction Co., Charlotte, N. C., and the cost will exceed $800,000.

The program will go a long way toward solving an acute shortage which has existed in the two communities for many months, according to H. Gordon Smith, vice-president and general manager of the company's textile division. The company will be able when the project is completed to take care of veterans returning to work in the plants, Mr. Smith said.

The plants employ a combined total of more than 3,000 men and women. They produce annually more than 60 million pounds of high-tenacity tire cord and heavy duck for shipment to the company's rubber plants across the country. Hogansville is also the home of Asbeston, a flameproof fabric used in the manufacture of fire-fighting suits, burnproof ironing board covers and other products. Winnsboro produces Ustex, a cotton yarn treated with chemicals to increase its strength as much as 70%. This product is being used extensively in the manufacture of numerous industrial products, such as, threads, hose, V-belts and webbings.

# Smoke Can Be Controlled

***Central heating, municipally operated, offers a practical solution with sound economical reasons to back it up***

*An untouched aerial view of Indianapolis, Ind., where the business district is served almost solidly by central heating. Notice how clear the downtown area is as compared with the outlying areas which are cloudy with "smog."*

By I. L. WISE
Consulting Engineer
Chicago, Ill.

IT IS GENERALLY accepted that dirt, grime, and gases produced under present fuel-burning practices injure health, damage property, and are expensive. However, the enormity of this situation is not generally realized. For every dollar spent for fuel, 50 cents is wasted. This is a dangerous and unnecessary squandering of our natural resources.

## Is Domestic Heating the Prime Offender?

Who makes this dirt? Obviously if six families live in an apartment they will not require as much fuel as will six similar families in isolated houses. Yet by comparison with city air, suburban air is clean and unpolluted. To determine whether residential heating is not the greatest cause of dirt let us see how fuels are used. A simple analysis of power generation discloses that 96.5% of the total average annual energy produced is derived from fuel and that 73% of this energy is used as fuel burned by consumers. We can break this down further by classifying the consumers and studying the heat waste that each experiences. See Table I.

Thus a simple arithmetical calculation shows that of all the energy in fuel as burned, half is lost as smoke, soot, dusty ashes, and similiar nuisances. Stated another way, discounting the ashes, we have 262,000,000 tons of gas, grime, soot, and dirt which is deposited over the United States every year—almost 4,000 pounds per person.

Notice from the table shown above that the three great contributors to smoke and grime are: industrials; railroads; and domestic heating. Let us inquire into each separately and see what it does to aggravate conditions.

Industrials vary their fuel burning programs greatly. Some have fairly constant 24-hour fuel-burning loads for five or six days a week and operate commendably. Others are 8-hour burners, banking the fires at night and cleaning them in the morning; stoking green coal furiously to have steam up for production operations. These make a great deal of dirt and smoke. Others have varying light and heavy loads that create inefficient operations and also create a great deal of smoke and dirt.

Railroads are the most inefficient of all fuel burners. Locomotives throw out great quantities of soot, smoke, and cinders even though they attempt to hide it by keeping the steam blowers on. Nothing much has been done about this except for one or two cities where electrification was forced on the railroads. Some other cities caused the railroads either wholly or in part to use diesel switch engines. This is not much of an improvement because diesels emit almost as much carbon grime as steam locomotives.

Domestic heating should properly include not only residences but office buildings, hotels, hospitals, stores and light manufacturers. While a residence heats all day, and to a minor extent all night also, light manufacturing and office buildings usually stop heating at 4 p.m. until 6:30 or 7:00 a.m. the next day and force the fires to care for the influx of tenants. Hotels stop heating at 10 to 11 p.m. and start again at 6 a.m. Hospitals heat all night.

Important also is the fact that all of these except residences are watched by smoke prevention officers. During the daylight they exercise care, but relax precautions after dark when detection is more difficult.

What can be done to alleviate the present detrimental prevalence of smoke, soot, and grime and the existing national fuel wastage? The possible curatives can be divided into two classifications:

1. Force all fuel users by legislative action to install the latest and most efficient smoke prevention devices.

Such a course would require years

TABLE I

| CLASSIFICATION | % PRODUCED | % WASTED | NET % WASTED |
|---|---|---|---|
| Industrials | 43.5% | 40% | 17.4% |
| Domestic Heating | 21.5% | 50% | 10.8% |
| Railroads | 12.5% | 90% | 11.25% |
| Fuel Producers | 7.5% | 55% | 4.12% |
| Electric Utilities | 7.0% | 26% | 1.82% |
| Gas Utilities | 2.0% | 77.5% | 1.5% |
| Scattering | 6.0% | 55% | 3.3% |
| Total Waste in Heat Recovery | | | 50.2% |

TABLE II

HOW STEAM COSTS COMPARE

| | Purchased-Central Pant | Made by User |
|---|---|---|
| Steam Pressure Lbs. Gage | 150 | 100 |
| BTU in Steam per lb. | 1195.6 | 1189.7 |
| BTU in 100° Returns per lb. | 67.6 | 67.7 |
| BTU added in Boiler per lb. | 1128 | 1122 |
| BTU of Fuel Burned @ 75% Eff. per lb. | 1505 | |
| BTU of Fuel Burned @ 60% Eff. per lb. | | 1870 |
| BTU including Plant Use (per lb.) Add 15% | 1730 | |
| BTU including Plant Use (per lb.) Add 10% | | 2057 |
| BTU including Distribution (per lb.) 15% Loss | 1990 | |
| Total Fuel BTU per Thousand lbs. of steam | 1,990,000 | 2,057,000 |
| BTU per Ton Coal | 24,000,000 | 24,000,000 |
| Coal Cost per Ton | $4.50 | $5.80 |
| Coal Cost per Million BTU | 18.75c | 24.16c |
| Coal Cost per Thousand Lbs. Steam | 37.85c | 49.7c |
| Relation of Fuel Cost to All Other Charges | | |
| (Privately Owned) | 45% | 60% |
| (Municipal) | 56% | |
| Cost per Thouand lbs. of Steam | | |
| (Privately Owned) | 84c | 82.8c |
| (Municipal) | 68c | |

to instigate and would involve legal battles that would be fought, refought, appealed and reappealed. Insofar as achieving anything of immediate real value, this classification can be forgotten.

2. Install central station heating.

There are many advantages claimed for the central heating plant: more efficient steam generation; lesser fuel cost; skilled plant operation; reduction of the smoke nuisance; a decrease in fire hazards; decrease in maintenance and decoration of buildings. All these advantages represent a step in the right direction. However, with the present average central heating practice, the owners decry the practice for these reasons:

(a) The investment to supply the maximum demand is too great in comparison with the low utilization factor.

(b) The differential in average coal prices is not sufficient to pay for the investment in maximum demand equipment and the distribution system.

Obviously cities with mild temperatures and short heating seasons are not good prospects for a profitable central heating business if we ignore the intrinsic civic advantages involved. Cities in colder climates and with high fuel prices show that central heating is profitable, especially when the full utilization of the fuel is realized. The central plant also can utilize the millions of tons of high-volatile coal for which there is no domestic market.

Chicago's degree-days total 6,287 and are within 1% of the average of all the United States areas having total annual degree days of 4,000 or over. Below that amount, central heating plants cannot be considered. A simple analysis of Chicago's heating requirements will show that a central station must provide a maximum service demand of 100% (occurring only 10 days each year) and install equipment and distribution to supply this demand while the average capacity installed is only used 24.4% of the time. That is, the interest and amortization for the 100% investment must be earned by quarter-time production.

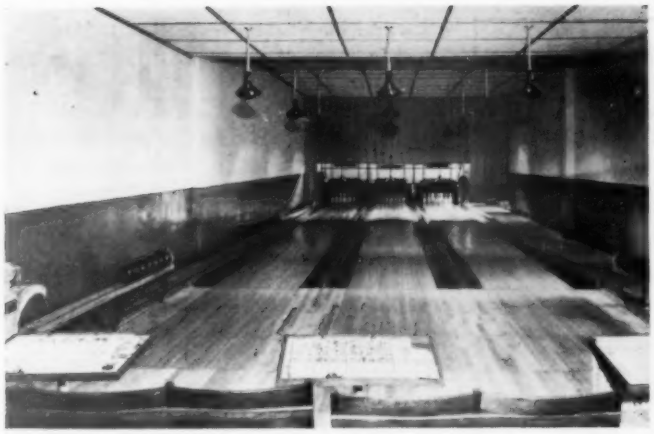
We can examine this further by studying the selling cost of steam. For instance in Chicago, a truck-load of 12,000 BTU coal cost (or used to cost) $5.80 per ton while the same coal in car loads cost $4.50 per ton. Our analysis would then go along the lines shown in Table II.

These are actual costs for steam used in ordinary office buildings and include fuel, labor, maintenance, depreciation, and interest on the investment. They do not include profit. They show that a privately owned central heating plant, selling steam only, in cities having average heating conditions of under 6,000 degree days is unable to operate profitably without large industrial sales, inasmuch as there are not a sufficient number of small commercial and residential customers to carry the load.

If, however, the central heating plant is municipally or cooperatively owned, profitable financial operation is possible because taxes are either totally or preponderantly reduced, and the financial carrying charges are cut in half. Thus in these average cities municipal operations seem to have engineeringly sound economic advantages.

## *Tractor Operated Crane Works for Jacksonville, Fla.*

*Poles for the electric distribution system and cast iron pipe for the water department are a lot easier to handle now that Jacksonville, Fla., acquired its tractor-operated crane. Previously light poles such as these shown, varying from 35 to 65 feet in length, were unloaded on trucks with cant hooks and accidents were frequent. William Webb, foreman in charge of electrical distribution, states that the savings from elimination of accidents alone would pay for the crane and tractor over a 5-year period. The crane is a Hughes-Keenan model with a 30-foot boom and is mounted on an International TD-18 diesel electric crawler tractor.*



*The bowling alleys and a general meeting room in the community center in Oregon City.*

# Two Towns Pool Recreational Resources

By DON JANUARY
Director, Recreation Department
Oregon City, Ore.

THE INITIAL steps toward organizing a full-fledged recreation program for Oregon City, Ore., were taken a little over a year ago when a City Youth Council was formed, composed of one member from each fraternal and service organization in the city. A budget was formulated and, on the basis of all available facts, it was decided that about $12,000 would be necessary annually to operate from year to year.

On November 7, 1945, the issue was presented to the voters and a one dollar tax per capita was approved for recreational activities. With funds assured, we went ahead and leased the Farr Building for a period of three years to serve as our first community center. Equipment was acquired and the facilities available now include a dance hall, three bowling alleys, a cafeteria, craft and game room, ping pong tables, pool table, and department offices.

The next step was to enlarge the entire program within the city. Recreational activities were mapped out for school children of the fourth to twelfth grades, inclusive. A city basketball league and a softball league were also organized in an effort to include adults as well as youths in this all inclusive undertaking. The community center, for example, is open two nights a week for senior high students, two nights for junior high students, and two nights a week for adults.

In looking back over the last year's accomplishment, the Recreation Department of Oregon City advances the following plans for the future:

A study of the respective neighborhoods and organizations functioning there to determine the recreation needs, yet at the same time avoid programs which conflict with other leisure time activities.

Plan for wider use of public school buildings for activities to include sports, games, music, crafts, dramatics, dancing, and hobby clubs.

Broad program of municipally organized sports.

Program for girls and working women.

Organization of Parents Playground Associations in connection with each playground for the purpose of assisting the leaders in the conduct of activities. Education through recreation is to be the underlying motto of summer playground programs.

## Neighboring Town Follows Suit

Just across the river from Oregon City lies the city of West Linn, with 2,800 population. Last year its voters approved a tax levy of $4,000 annually for a public recreation department. The mayor and city council planned to coordinate activities with Oregon City's Recreation Department. Just recently West Linn established its Recreation Commission to administer the recreational budget. The author has been named advisor to the Commission. Our immediate problems are to employ a staff and plan facilities for the park areas of West Linn and to form a student recreation council within the high school, similar to that of Oregon City, to act as liaison between the students and the Recreation Commission. Stress is also to be put on close cooperation and mutual use of existing facilities among West Linn and Oregon City.

For this purpose, the Oregon City Recreation Department has prepared a report which was submitted for the consideration of the West Linn City Council. It enumerates the many possibilities of cooperation between the two communities and mentions specific programs which could be operated on a joint basis. West Linn senior high school students, for example, are invited to become members of the Oregon City recreation crafts club which meets one night a week in the city center. They can also become members of the chess club, the dramatic club, and the science club. Similarly an invitation has been extended to the adults of West Linn to participate in crafts, chess, and dramatics which are organized at the Oregon City community center every week.

This program forms a base of operations which will enable both communities to pool their resources and thereby enjoy a more extensive recreation program than would otherwise have been possible.

## The Neighborhood of the World

***America is a house in the neighborhood of the world. It is comfortable and spacious and blessed with the sun. We love it. Not only as property-owners but as good citizens of the world, Americans have a duty to protect it, keep it well, and cause it to prosper. But a good home in a blighted neighborhood is doomed. . . . The time has come to give serious attention to the neighborhood of the world. Americans cannot move out of it into any astral suburb. To maintain America we must maintain the world. But no one neighbor can do this alone; the neighborhood must act as a unit. Thus to act it must first learn to think.***

—BRYN J. HOVDE in the May 27, 1946, *Bulletin* of the New School for Social Research, New York.

# San Francisco Enlarges Richmond-Sunset Sewage Treatment Plant

By SHERMAN P. DUCKEL
Assistant City Engineer
San Francisco, Calif.

PLANS and specifications for the enlargement of the Richmond-Sunset Sewage Treatment Plant in San Francisco are now completed and the Department of Public Works is receiving bids on the work.

The Richmond-Sunset Plant was constructed in the westerly end of Golden Gate Park just across the highway from the Pacific Ocean. It is well screened from passing traffic and as a result few San Franciscans are aware of its location. It was constructed in 1938 and put into operation in April of the next year. The original design was for a flow of 15 mgd from a contributing population of 200,000. Because of lack of funds only one-half of the units required for this capacity were constructed and the plant as completed now has a capacity of 7.5 mgd.

The type of treatment is primary. The sewage is prechlorinated for odor control, is then run through bar racks, grit-grease tanks, mechanical flocculation tanks, sedimentation tanks and again chlorinated for bacteriological disinfection. The effluent is discharged into the Pacific Ocean. Screenings are incinerated, grit and sand are hauled to a dump, digested sludge is washed in elutriation tanks and then dewatered by means of a vacuum filter. The filter cake is used as fertilizer by the Park Department. A portion of the sludge gas is used to fire the boilers and the screening's incinerator. The remainder is wasted by burning.

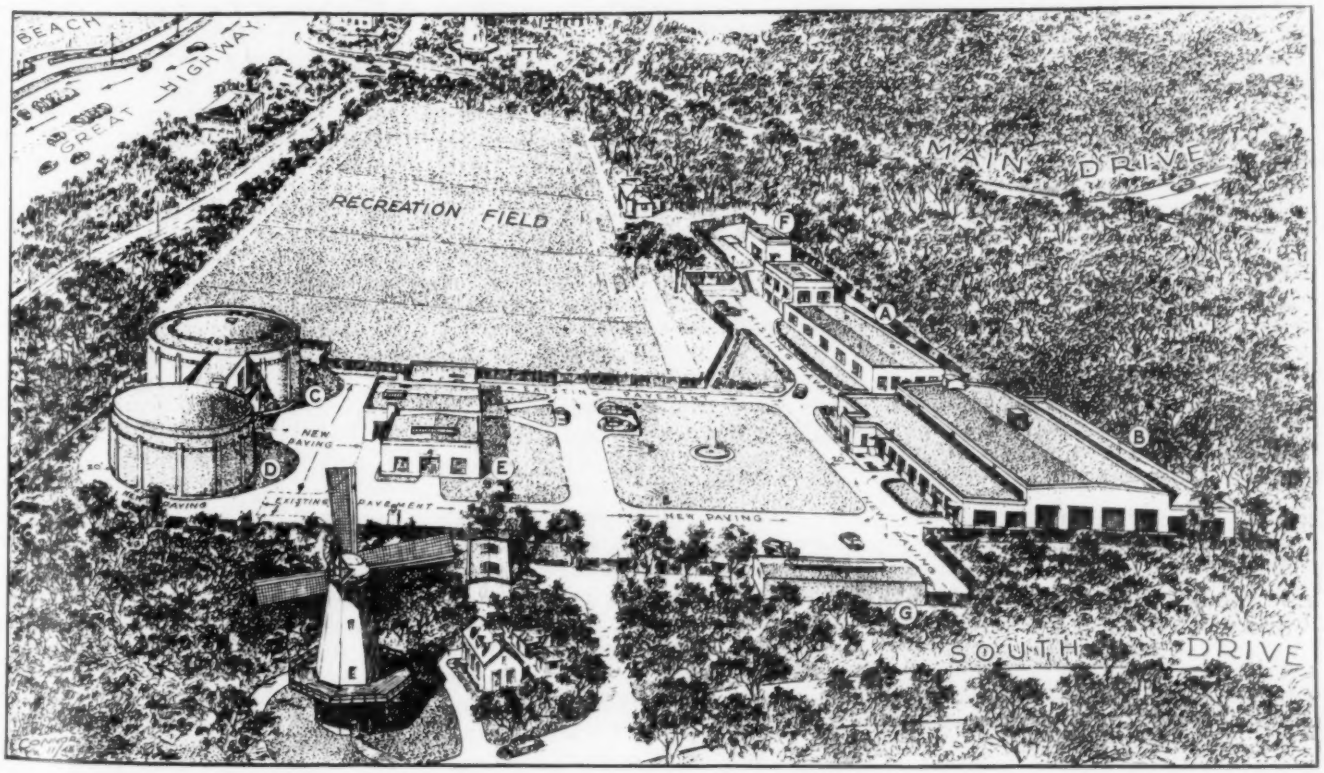
## Capacity Increased to 20 mgd

The proposed enlargement of the plant will increase its capacity to 20 mgd. The work will include the construction of two additional mixing and sedimentation tanks, a reinforced concrete superstructure to house them and the existing tanks, the reconversion of an existing 80-foot diameter primary digester to a secondary digester with floating gas holder, a new 100-foot diameter primary digester, a connecting sludge control house, an independent water supply, a new vacuum filter installation, a new garage building, additional landscaping and the replacement of miscellaneous existing equipment.

The superstructure to house the new and existing sedimentation and mixing tanks has been designed to utilize glass block panels with diverting prisms in preference to ordinary steel sash windows. This has been done not only to obtain increased natural lighting of the interior of the building but also to eliminate the constant maintenance of the steel sash on which maintenance has been considerable as the plant is less than 1,000 feet from the ocean. A mechanical ventilation system will provide for the complete changing of the air in this building once every ten minutes.

## Sludge Treatment Unique

Another new feature of the plant will be the system of sludge treatment. Provision will be made for the withdrawal of sludge simultaneously from several different levels of the primary digester. Innoculation of the raw sludge will be accomplished by two separate return digested sludge pumping systems. One system will discharge digested sludge through special nozzles onto the top of the scum layer in the primary digester. The other




*This is the way San Francisco's Richmond-Sunset sewage treatment plant will look when the enlargement is completed. The buildings are labeled as follows: (A) pre-treatment, (B) mixing and sedimentation, (C) primary digester, (D) secondary digester, (E) main building (F) non-potable water storage, (G) storage.*

pumping system will discharge digested sludge into the same mixing chamber which will receive raw sludge from the sedimentation tanks. The digesters will be equipped with a number of sampling lines to assist in control of the sludge digestion. The primary digester will be equipped with five single-blade paddle mixers. There will be installed in the primary digester a total of ten internal sludge heat exchangers of the vertical type. A new development for washing the primary sludge before it is discharged into the secondary digester will be used. This procedure was recommended by A. L. Genter, consulting engineer, of Baltimore, Md. The washing of the primary sludge will accelerate the hydraulic subsidence with clarification of supernatant liquor in the secondary digester. Our present elutriation system has been revamped to allow for the washing of the primary sludge during off-peak hours.

The artist's view of the plant as shown on the preceding page is good in all respects, except that the chain link fence is actually screened by a hedge which, of course, softens the general appearance of the concrete structures. The windmill in the foreground is not a part of the sewage treatment plant but houses a pump which is a part of the Park Department's irrigation system.

The contemplated enlargement of the plant will cost in excess of half a million dollars. Funds have already been provided as part of a $12,000,000 bond issue which was voted by the people of San Francisco in November 1944. The contract, when awarded, will be executed by the Department of Public Works, and the work will be under the general direction of H. C. Vensano, director of the department. Plans and specifications were prepared by the City Engineer's Office with the advice of Clyde C. Kennedy, consulting sanitary engineer, who was employed by the city as consultant. Ralph G. Wadsworth, city engineer, will supervise the construction work.

# Summarizing Facts About DDT

MUCH-TALKED-OF DDT is a war baby. When shipping shortages cut the United States off from its main source of insecticides, the Department of Agriculture began an intensive search for another. DDT proved to be the best.

Strange as it may seem, DDT is not a new insecticide; it has been known as a chemical since 1874, and as an insecticide since 1939. Incidentally, there is at least one other form of this product that can use the same name and is almost as toxic to insects.

It may be identified as a white, odorless powder, with a specific gravity of 1.6. It is stable, with a low-melting point, but practically insoluble in water, readily soluble to various degrees in petroleum products.

The product acts on the nervous system and produces "DDT's." Its action is slow, taking one-half to several hours to knock down and kill. However, its action is sure. Recovery is rare.

It can be used in the form of a dust, solution, emulsion, or suspension.

The dust must be diluted with some inert product such as talcum by at least 70% or it will clump. One should use the dust against roaches, ants, and similar insects spreading it with a hand shaker, hand pump or, on a large scale, with an airplane.

When using the solutions, one has the alternative of the space spray or the residual-effect spray. The space spray, fortified with pyrethrum, effectively couples the instantaneous action of this insecticide with the sure action of DDT, and can be applied with a hand-powered gun. The residual effect spray utilizes a coarser droplet and can be painted on a surface if desired. In residual spraying, the solvent evaporates, leaving minute crystals that produce the killing effect long afterwards.

A weak solution of DDT does not mean that the insecticide has lost its effect, but only requires that more be applied. To kill flies, you need 200 ml per square foot of DDT. This can be produced with a 5% solution by applying 4ml per square foot or covering 950 square feet per gallon. A 5% solution will not produce a killing residual on a highly glazed surface. Very porous surfaces can use a 2½% solution effectively.

The DDT emulsion forms the best medium of attacking the anopheles mosquito and has the advantage of requiring only a small amount of stock mixed on the spot. The proper percentages of stock concentrate are 20% DDT, 75% xylene, and 5% emulsifier. The concentrate can be mixed with water at the rate of one part concentrate to three parts water to form a 5% DDT emulsion.

The residual effect spray will kill a house fly as long as three months after application. It should be applied to doors, wall screens, garbage cans, or other resting areas of the insects.

It also forms an effective weapon against the annoying psychoda fly in the sewage treatment trickling filter when it is applied to resting surfaces. The larvacide may be applied to produce 0.10 pounds of DDT per acre of filter surface and should be applied once a week in order to control the life-cycle of the fly.

One should not be afraid of DDT. There is no bona-fide record of anyone every being injured by it although millions have used it. It actually is less dangerous than many other insecticides such as arsenic compounds and sodium fluoride. Oily solutions may have an irritating effect on the skin and should be washed off promptly. Suspensions do not. Both xylene and kerosene are toxic to the skin, consequently when the insecticides are combined with them, the operators should use rubber gloves and goggles.

*From papers delivered before the New Jersey Sewage Works Association in Trenton by Capt. Sheldon Lang, U.S.P.H.S., and Leslie West, Chief Engineer, Joint Meeting Sewerage Treatment Plant, Elizabeth, N. J.*

## *Gas, Electricity, and Heating Projects Planned*

OCCUPYING an interesting place, in the municipal field, are the city-owned gas, electric, and central heating projects being assisted through the planning stage by Federal Works Agency loans. The projects in the planning stage listed here will probably see early construction.

| | | | |
|---|---|---|---|
| Alabama | | | |
| Ragland | G | $35,000 |
| Sylacauga | G | 450,000 |
| Arizona | | | |
| Wickenburg | E | 28,000 |
| Arkansas | | | |
| Bentonville | E | 113,050 |
| Florida | | | |
| Gainesville | E | 70,800 |
| Indiana | | | |
| Rockville | E | 140,000 |
| Louisiana | | | |
| New Roads | G | 190,184 |
| Mississippi | | | |
| Poplarville | E | 164,889 |
| Missouri | | | |
| Richland | E | 89,000 |
| New Mexico | | | |
| Tularosa | G | 27,950 |
| South Dakota | | | |
| Mitchell | CH | 260,100 |
| Utah | | | |
| Nephi | E | 72,130 |

E—electricity.
G—gas
CH—central heating.

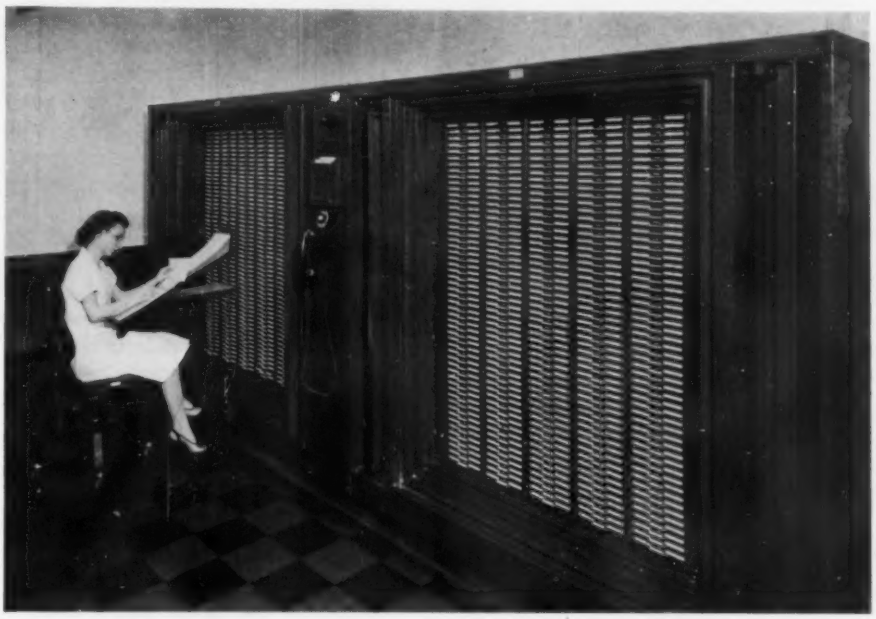
# One Record for All Municipal Utilities Customer Data

***Single customer history record of the Memphis Light, Gas and Water Division now consolidates ten records kept individually under the former system. All information relative to the three services is combined.***

THE OBJECTIVES of the Memphis, Tenn., Light, Gas and Water Division are the same as those of any progressive private utility with the exception that any improved service and savings are immediately felt by the customers because they are its owners.

When the city undertook the operation of a municipal utility it wanted (1) improved service to customers, (2) better working facilities for employees, (3) reduced operating costs, where they did not interfere with the service and the working conditions of the employees.

The provision of a congenial atmosphere is a primary step in any sound business system. Desks replaced counters, with a definite improvement in customer comfort and service. Divided duties were untangled and order writing was reduced to a minimum.



*The Meter History Record section houses 210,000 3x4 cards containing complete data for light, gas, and water meters.*

## Soundex Record Filing Eliminates Duplication

Today the customer history record consolidates, at one point, ten records that had been kept individually under the old method. This record is filed by Soundex, which eliminates duplication, or the confusion of one account with another, by the automatic grouping of similar sounding names, regardless of variations in spelling. The customer history forms filed in the Kardex pockets illustrate how so much information can be effectively condensed in so little space.

The Kardex customer service record combines all information relative to the three services—gas, electricity and water—in one pocket. When a request is received pertaining to any or all of these services, the order is taken by a clerk who has complete information regarding each service location. Orders to turn service on or off, or to adjust appliances, require only the checking of necessary information available, the posting of any essential data, and the order is on its way for immediate execution. Delays are eliminated; customer waiting time and clerical effort are greatly reduced; orders are worked promptly and efficiently.

The complete history of over 200,000 gas, electric and water meters, representing a property value of over one million dollars, is kept in an efficient Kardex record and is protected by Safe-Cabinets. Even though meters may be frequently transferred from one location to another, the maintenance of the record is not complicated and is always accurate. Meter history cards are filed by meter make, size, and year purchased.

## Individual Test Records Maintained for Meters

Individual test records are maintained for each meter. These cards are so designed that they can be used as both an order to remove and to test a meter. This assures periodic changing and testing of meters and also guarantees a degree of individual meter accuracy that conforms with the high standards established by the Light, Gas, and Water Division. These cards are filed in vertical cabinets by date of test.

A complete history of each pole in use is recorded on a card whose visible margin provides space for showing the pole number, checking its height in the proper square, and signaling the type of ownership or special conditions. All pertinent information regarding a given pole can be found on this record.

## Complete Data Are Filed for Gas Main Extensions

Complete property data regarding gas main extensions are filed in Kardex pockets alphabetically by the street name and numerically by house number. Odd numbered locations are filed in the back of the Kardex pockets.

This card not only carries a complete history of the installation of the extension, but shows any repairs that have been made. Colored signals, in the visible margin, indicate the voltage at the location, and also inactive services.

This system, put in by the Remington Rand Records Installation Department, has resulted in a substantial saving in annual cost and has improved service to the customer. Moreover, during installation the executive and department heads continued their regular routine without interruption, and the new system was turned over to them as a complete record in full operation.

# Outmoded Fire Apparatus Limits Efficiency

ONE of the important problems of peacetime safety is preventing conflagrations, according to the National Board of Fire Underwriters. The material which follows is from its Bulletin 228.

Every fire department should have a certain amount of reserve apparatus. For the smaller communities this may not be possible, but these smaller places can usually borrow apparatus from well-supplied cities and towns when accidents or repairs make it necessary to put apparatus out of service. To obtain this reserve, it should be a hard and fast rule not to trade in apparatus when new equipment is purchased.

Another factor of importance is the greater efficiency of two pieces of apparatus for laying hose and performing booster line work and for using turret or deck pipes. One can act as a hose tender and be placed near the building, and the other can be attached to the hydrant. When new apparatus is purchased the older piece can be used for the hose tender.

Adequate apparatus would mean that in serious fires, the off-shift of firemen would be equipped to aid or to provide protection to parts of the city without companies; the rendering of aid to other communities would not unduly reduce normal protection, and, of vital importance, some of the present apparatus which might not be of sufficient dependability, could be replaced.

As to the question of dependability of present fire apparatus, it must be realized that apparatus purchased prior to 1930 followed largely the designs first adopted by manufacturers in the years between 1915 and 1920 before general experience with commercial trucks had eliminated many points of weakness and unreliability, and before the automobile industry in general had tried out and adopted special metals, increased compression, dynamic balance of moving parts, and many other features. These earlier types of fire apparatus, as anyone knows who has driven commercial trucks and pleasure cars or ridden in buses, were not designed as well as modern apparatus for load distribution, proper gear ratio for hill climbing, low center of gravity, ease of repair and smooth riding. Among the important changes in modern fire apparatus are: increased acceleration and braking, stronger chassis; more efficient pump and motor; greater carrying capacity; better operating conditions; and, of vital importance, enclosure for the men, which provides greater protection from the weather and against injury in accidents.

### Superior Modern Design

The present design of power-operated aerial ladders is so far superior to the older aerial ladder designs and so much more adaptable to lifesaving than the service truck now so extensively used that there can be no argument, other than financial inability, against replacement of these older ladder trucks.

In considering the question, it should be borne in mind that 90% of the yearly appropriation for a fire department is the cost of manpower and, therefore, it is poor economy not to provide apparatus and equipment of the best and most dependable type.

## *Floor Plan for Prichard Fire Station*

*Floor plan for the New Prichard, Ala., fire station, described on page 15 of the May* AMERICAN CITY, *were drawn by Laurence E. Allen, Mobile architect. The station was erected at an approximate cost of* $36,200. *The Federal Works Agency granted* $17,600 *of this sum.*

## *Modern Building Codes Promote Fire Safety*

BUILDING codes in most American cities are outmoded and should be changed to permit more realistic dealing with fire hazards, B. L. Wood of New York, consulting engineer of the American Iron and Steel Institute, told the Western Society of Engineers at its meeting in Chicago this spring.

Half of the city codes are over fifteen years old, he said, and one out of four is over 20 years old. These outmoded codes fail to take advantage of economy and safety factors provided by new building techniques.

"The science of fire protection and building regulation must keep step with the progress made by the building industry to reduce the already serious annual losses from fire," Mr. Wood said.

"Most cities permit building a gas service station with four brick piers, glass show windows between them and interior unprotected wood-joist construction, but they will not allow the station to be built of steel, concrete and other noncombustible materials unless the steel is fire protected. The building official often recognized the superior fire safety afforded by the latter type of structure, but the code neglected to provide for its use.

"Requirements governing protection of openings in walls are inadequately treated in many building codes. New types of finishing materials, some easily ignitible, have already proved fatal in fires. Their introduction in recent years has created a need for more careful and rational regulation. We are required to build heavy masonry exterior walls for protection where only a low degree of fire hazard exists. But building codes permit glass openings in these walls, without limit or size. Even fire windows, bearing the Underwriters' label, are capable of withstanding only 45 minutes of the standard fire test. Beyond that exposure the glass melts.

"High labor and material costs threaten to retard such-needed building construction. Only through development and adaptation of new materials, methods and techniques will it be possible to offset these increased costs. For uniformity of safety, only ratings established in accordance with the standard American Society for Testing Materials fire-test procedure should be adopted in building codes."

In the April issue of THE AMERICAN CITY Miles L. Colean's article, "Building Codes, Building Costs, and Building Safety," stresses the importance of a more realistic dealing with fire hazards in building codes.

## Upper Darby Has Fire Prevention Bureau

AS A PUBLIC safety measure, the Board of Commissioners of the Township of Upper Darby, Pa., has provided for the establishment of a Bureau of Fire Prevention, comprising officers of the Bureau and the Fire Committee appointed by the Board.

Bureau officers include the fire marshal and such other assistant fire marshals or inspectors as the Board may appoint. The marshal acts as executive officer of the township and represents the township in formulating rules and regulations for fire emergencies. From time to time he reports to the Board on the services of the fire companies in the township and on the condition of fire apparatus and equipment.

Ordinances cover the prevention of fires, the storage and use of explosives and inflammables, the installation and maintenance of automatic and other private fire alarm systems and fire extinguishing equipment. They also cover maintenance and regulation of fire escapes; the provision of adequate fire exists, from all places in which numbers of persons work, live, or congregate; and the investigation of fires.

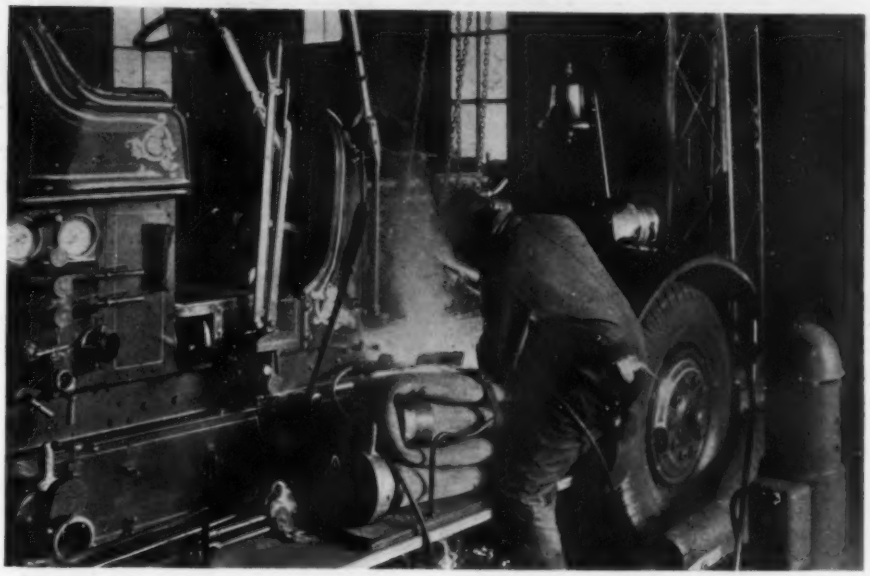
## Ramsey Firemen Test High-Pressure Spray

FIRE CHIEFS and firemen from thirty towns in New Jersey, New York, and Connecticut and hundreds of local citizens witnessed a high-pressure fire-fighting demonstration conducted by the Ramsey, N. J., Fire Department recently.

The site was a three-story frame house about which Mayor Franklin D. Haring said: "I am glad the house burned down. It was an eyesore for years and everyone in town is glad to see it go." But, though saturated with gasoline, it did not go before the high-pressure truck had extinguished the blaze three times. Afterwards it was permitted to burn down to the chimney.

The demonstration was conceived by Millard A. Hopper of the Ramsey office of the John Bean Manufacturing Company, a subsidiary of Food Machinery Corporation. Mr. Hopper owns the property on which the old house stood, and he put it and a standard FMC fog fire fighter at the service of Ramsey's Fire Chief Percy Ackerson and his 35 firemen. The truck carries 400 gallons of water and has two guns of 30 gallons each with 600 pounds nozzle pressure to produce the fine fast spray which quickly subdued the fire.

## Arc Welding Useful in Fire Equipment Maintenance



PHOTOGRAPH BY COURTESY OF THE LINCOLN ELECTRIC COMPANY

*Fire Department maintenance man uses arc welding in truck repairs.*

MAINTENANCE of municipal fire equipment is an unusually difficult problem because of the variety of vehicles which must be available for instantaneous service. Since obtaining or storing parts for all of them is not feasible, arc welding plays an important role in keeping apparatus constantly ready.

In the Superior, Wis., Fire Department there are from four to eight different types of vehicles of various ages. Some are new, while others have been in service for more than 20 years. They include aerial ladder trucks, combination ladder-pumper trucks, 1,000 and 750-gallons per minute pumping engines, hose wagons, supply trucks, inspector's trucks, chief's cars, ambulances, trailer pumps, and rowboat rescue trailers.

Special equipment consists of ladders of nearly every length, ten different sizes of hose, dozens of kinds of nozzles in various sizes and alloys, gas masks, first aid oxygen equipment, rowboats and draglines, electric lights ranging from large spotlights to battery hand lights, door openers, hydraulic jacks, and assorted items.

The department's maintenance men must be trained to do almost anything and the welding equipment must be equally as versatile. One of Superior's standard pumping engines, for example, has a pump of bronze, a shaft of stainless steel, a case of bronze or nickel iron, a motor of cast iron, a motor base of aluminum casting, and a body and chassis of ordinary steel. Repair parts are not stocked in the local garage and it is, obviously, impossible to stock all of these parts in the department.

Fire departments must be on the alert for new developments and new methods of fire fighting and they must be prepared to take advantage of them without having to buy expensive new equipment. At the present, the Superior Fire Department is developing the use of high pressure fog streams. To make this change, the rigs must be rebuilt. Welding equipment, furnished by The Lincoln Electric Company, Cleveland, Ohio, has given speedy and durable service in this project.

CHIEF OLAF SORENSON
Superior Fire Department
Superior, Wis.

## Schenectady Lowers Annual Fire Loss

SCHENECTADY, N. Y., pushed its fire losses for the year down to the lowest level since 1920, and has won first place in the 50,000 to 100,000 population class of the United States Chamber of Commerce's 1945 fire waste contest.

Figures from Fire Chief James J. Higgins show that 1945 losses on an asssessed property valuation of $164,477,433 were $78,945.25 in comparison with losses of $57,379.79 on assessed property valuation of $73,000,232 in 1920. A highlight of the record was the zero loss during the annual fire prevention week in October. For the first time in the history of the fire department no loss was realized in a seven days' period.

Schenectady observed a clean-up and fire prevention week in May. During the recent campaign every home in the city was inspected by members of the fire department.

# Balance Sheet Grouping of Municipal Debts and Capital Assets

## *With a discussion of depreciation of city-owned properties*

By W. D. STOWE
Auditor, City of Scranton, Pa.

A MUNICIPALITY'S accounting system must make it possible to determine whether financial affairs are being administered according to legal provisions. Many municipal accounts, however, fail to indicate readily debt limitations.

In balance sheet make-up the segregation of accounts is necessary for a clear statement of municipal finances. Municipal debt limitations could be determined more rapidly and easily if Funded Debt Accounts were carried in the municipal ledger as suggested by the balance sheet outlined in Table I.

Too few ledgers as maintained today will immediately yield such information, yet it is no more than the balance sheet should be required to show when posting is completed for the period. In statements of municipal accounts the amount of general bonded indebtedness usually appears on the balance sheet under Capital Accounts, as shown in Table II.

### Bonded Indebtedness of Municipality

Ordinarily the purpose of the general bonds issue is to obtain money for large structural projects, to acquire lands, or sometimes to refund judgment debts for municipal indemnities. A considerable portion of the assets which are represented in the balance sheet may have been acquired out of the proceeds of the bonds listed on the liability side. However, as soon as title to the physical properties is vested in the municipality, the property is removed from liability to claim by bondholders or any other creditors of the municipality. The bonds therefore are debentures and the security for them lies merely in municipal taxing power and the value of any specifically pledged, choses in action.*

As the proceeds of a general credit bond issue are received, they immediately, by the terms of the ordinance authorizing the issue, become a trust fund for carrying out the specific projects set forth in the ordinance. Budgets for these special funds differ in time limitation from the budget of the municipality's yearly operations. The latter usually terminates with the close of the municipal fiscal year, whereas the special funds budgets which control expenditures of bond proceeds and other special funds continue in effect until exhaustion of the funds or completion of the project. Such budgets may be in force over several years or may even be perpetual by virtue of income from investments.

Bond sale proceeds in a small city may be considered in the group of Special Trust Accounts and require spe-

* A right to personal property or money not in possession but recoverable in an action at law; a written obligation upon which suit may be instituted.

TABLE 1

FUNDED DEBT ACCOUNTS

ASSETS

| | | |
|---|---|---|
| *Councilmanic* | | |
| CASH (applicable solely to redemption of funded debt and interest) | | $ 30,000 |
| RECEIVABLES, MISCELLANEOUS (applicable ditto) | | 200,000 |
| TAX LEVY RECEIVABLE, CURRENT DUPLICATE (budgeted to redemption of funded debt and interest) | $240,000 | |
| Less RESERVE FOR CURRENTLY NON-COLLECTIBLE | 60,000 | 180,000 |
| TAX LEVY RECEIVABLE, DELINQUENT DUPLICATES (budgeted to redemption of funded debt and interest) | 700,000 | |
| Less RESERVE FOR CURRENTLY NON-COLLECTABIE | 200,000 | 500,000 |
| CAPACITY FOR COUNCILMANIC DEBT BY REASON OF ASSESSED PROPERTY VALUATION (statutory authority of 2% on latest assessment roll certified, $100,000,000 realty value) | | 2,000,000 |
| | | $2,910,000 |
| *Electoral* | | |
| CASH (applicable solely to redemption of funded debt and interest) | | $ 70,000 |
| TAX LEVY RECEIVABLE, CURRENT DUPLICATE (budgeted solely to redemption of electoral funded debt and interest) | $300,000 | |
| Less RESERVE FOR CURRENTLY NON-COLLECTIBLE ELECTORAL TAX LEVY | 75,000 | 225,000 |
| CAPACITY FOR ELECTORAL DEBT (authorized by vote of November 10, 1930, for specific purposes | 2,700,000 | 1,800,000 |
| Less amount already issued and retired | 900,000 | 2,095,000 |
| Total assets | | $5,005,000 |

LIABILITIES AND AVAILABILITIE

| | | |
|---|---|---|
| *Councilmanic* | | |
| INTEREST PAYABLE MATURED (coupons matured but not presented) | | $ 2,000 |
| BONDS PAYABLE (councilmanic issues, general) | | 2,200,000 |
| JUDGMENTS PAYABLE (decreed, awaiting funding) | | 100,000 |
| UNABSORBED MARGIN FOR COUNCILMANIC DEBT | | 608,000 |
| | | $2,910,000 |
| *Electoral* | | |
| INTEREST PAYABLE MATURED (coupons matured but not presented) | | $ 2,000 |
| BONDS PAYABLE (electoral issues outstanding) | | 400,000 |
| RESERVE FOR ELECTORAL BOND ISSUES (authorizations voted for specific purposes, but not yet issued) | | 1,400,000 |
| EXCESS PROVISION TO DATE AGAINST ELECTORAL DEBT REQUIREMENTS ("surplus"—probably arising out of tax collections more efficient than anticipated in current period) | | 293,000 |
| | | 2,095,000 |
| Total liabilities and availabilities | | $5,005,000 |

TABLE 2

CAPITAL ACCOUNTS

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $ 10,000 | Appropriations | $ 200,000 |
| Authorized construction | 100,000 | Construction certificates | 5,000 |
| City properties | 10,000,000 | Bonds payable | 5,000,000 |
| Due from state | 5,000 | Capital surplus | 4,914,000 |
| Other assets | 4,000 | | |
| | $10,119,000 | | $10,119,000 |

cial administration no less than do special bequest funds left conditionally to the municipality. They may resemble revolving funds with income automatically budgeted for the continuance of the project and expenditures charged against the budget.

### Capital Accounts

The capital accounts balance sheet of a municipality should include the facts relating to Permanent Properties without reference to general bonded debt liability. For example, under Assets should be such accounts as land, rights of way, buildings less depreciation reserve, equipment less depreciation reserve, all totaling, say, $4,100,000. Then, under Liabilities and Availabilities should appear "City's equity in permanent properties, $4,100,000."

It is commonly argued that it is neither necessary nor desirable to show depreciation in the accounts of municipally owned properties. Depreciation is not used to balance an operating budget nor are valuations of municipally owned property of practical relation to municipal borrowing power; however, municipal capital account statements which give no indication of the condition of municipal buildings and equipment are unfortunately weak. Such information might serve as a guide to legislators making appropriations for maintenance and replacements through current operating budgets. Municipal officials would find in depreciation reserve figures definite support for their requests when urging councilmen, commissioners, and burgesses to make adequate provision for upkeep and improvement of municipal properties. And, with such accounting information to consider, local legislators might tend to prevent the wide fluctuation in tax rates which result from unchecked political manipulations.

# Alternative Methods of Taxing Real Property

A STRONG PLEA for home rule in taxation and for experimentation with alternative methods of taxing real property, was voiced by Philip H. Cornick, of the Institute of Public Administration, New York, in a "round table" on property taxation, at the National Tax Conference in Chicago on June 3.

"In a period such as that in which we are living, when cherished institutions are imperiled everywhere," said Mr. Cornick, "no study of real estate taxation can be complete unless it emphasizes the fact that locally administered taxes on real property have been closely associated throughout many centuries with the growth of virile institutions of local self-government, and of the concepts of individual liberty.

"It may be contended that this association is the result merely of historical accident. The fact remains, nevertheless, that in the great motherlands of southern Europe in which real estate taxation had not been highly developed on the local level prior to the age of colonization following the global explorations of the fifteenth and sixteenth centuries, local autonomy of the type which we, for example, take for granted, has had only a stunted growth; and that real estate taxation and local autonomy alike have developed only in narrowly limited forms in most of the overseas settlements descended from those mother countries.

"In some of the countries of northern Europe, on the other hand, institutions of local self-government, and of the local taxation of real estate, had early reached higher stages of development. In those countries of northern Europe which have emerged from the second World War as self-governing nations, press dispatches and official reports indicate that the ancient institutions of local self-government and real estate taxation have survived both blitzkrieg and occupation. Meanwhile, their overseas descendants have continued in the old tradition."

Following a discussion of the local rating systems of England, Wales, Scotland, the self-governing dominions, and the United States, Mr. Cornick offered the following conclusions:

### A Common Characteristic

"Now what useful lessons can we, as Americans, draw from a study of the wide range of alternative methods of taxing real property in use today among the family of systems to which our own systems belong? In order to provide a basis for an answer to this question, it is not necessary, I think, first to weigh the many contentious arguments for and against each of the alternative methods now in use. Whatever we may think of the advantages or disadvantages, the equities or inequities of any one or more of these methods, we can agree on this: that each of the variants has, during periods of time ranging from many decades to centuries, demonstrated its capacity to provide the local revenues necessary for the support of highly developed and costly systems of local self-government. This characteristic of the local tax on real estate, at least, is common alike to the tax on bare land values in Sydney, and to the general property tax in Chicago; to the tax on capital value of the United States; and to the tax on annual value of Great Britain.

### Special Characteristics

"And now for a glance at the special characteristics of some of the variants. The English system of taxing occupiers instead of owners has numerous faults which are presented clearly and frankly by many of that nation's leading authorities on public finance. To an American who has repeatedly seen his fellow citizens elect to local office men of negligible ability and doubtful integrity merely because the successful candidate has stressed his record as a good spender, the system would seem to have one great and unique advantage, at least for use in a city where the overwhelming majority of the voters are tenants. If the tenant voters, instead of paying nominal poll taxes and negligible personal property taxes, paid real estate taxes in proportion to their gross or net rents at rates comparable to those which prevail in England, is there not a possibility that they would demand of the candidates for public office other qualities than that of being careless with other people's money? At a time when increased costs of local government are destined to mount inexorably in spite of all that even the most capable officials can do, here is a time tested idea worthy of serious consideration.

### To Stimulate Housing

"The current housing shortage is in the mind of every man in this gathering. Our federal government and some of our states have appropriated sums, staggering in the aggregate, to be used as direct subsidies for certain classes of the sorely needed new housing. Our local governments are granting indirect subsidies in the form of tax exemption. Why not, then, permit free experimentation with the type of total or partial exemption, numerous examples of which have long existed in cities of Canada, Australia, New Zealand, South Africa, and even in this country? The method hasn't wrecked the cities which use it. It probably won't wreck such other cities as may desire to test the method. There are those who think it might help. If adverse effects should follow, they can hardly be more inequitable than the program of selective subsidies on which we have embarked, the burden of which rests heavily on unsubsidized owners and builders.

### Freedom to Experiment

"And finally, there is the question of freedom—freedom to experiment, to make mistakes, to learn by experience, which is basic in the concepts on which our nation was founded. Are Americans inherently less capable of self-government than their cousins in the self-governing dominions of the British Empire? If not, why should their local governments, operating in a world in which rapid changes are in progress, be confined in constitutional strait-jackets which impose on them rigid forms of local taxation, some of which have long since been abandoned in all of the nations to which they are most closely akin?"

The full text of Mr. McCormick's paper will be published by the National Tax Association in the Proceedings of its 1946 Conference.

# If You Don't Want Strikes in Your City

***Here is an idea you might refer to your local industrialists***

By HERMAN W. STEINKRAUS
President and Chairman of the Board
Bridgeport Brass Company
Bridgeport, Conn.

***While this article is concerned chiefly with what private industry can do to promote harmony in employer-employe relations, many of the ideas could be adopted or adapted to advantage in municipal shops, public utilities, and offices.***

STRIKES and the prevalence of labor unrest are among the most serious situations that face city or town officials.

Strikes not only reduce local prosperity, but they also create civic disturbance which increases the responsibilities of the police department and other branches of the municipal government.

Can anything be done to improve industrial relations? If there is a formula, I believe that mayors and other officials of industrialized cities are just as anxious to know it as are the heads of local corporations.

What could a city official do with such a formula or plan of procedure?

That depends largely on the interest and determination of the official and the receptiveness of the larger industries or corporations in his city. After he has thoroughly assimilated the plan, he may first want to sell it to the city council or city commission and thus strengthen his hand for the business of convincing the managements of the local plants. The local Chamber of Commerce might prove an effective ally.

## The Underlying Need

Keeping the employe happy consists, in the first place, of knowing what he wants in order to be happy. The amazing thing is that these basic wants are so simple. They are not at all complicated or legal. *First, the worker wants a steady job at good pay and some assurance that he will continue to have a steady job. He prefers this to any other form of social security or any kind of dole. Second, he wants the opportunity to advance. If he shows ability, he wants to grow—which is a normal human desire. Third, he wants to feel he is part of the team—not merely a number on the payroll: he wants to have the picture of the over-all aims and purposes of the organization and how he can do his part.*

One union leader recently said to me that he thought the most important single need is to develop a better spirit of understanding between labor and management. While I agreed with him fully, I also believe that in many companies the employer must first develop a better understanding among his own management group.

All ranks of management must understand the company's policies in order to interpret them correctly to employes.

How can this be brought about? At our company we have a plan which we attempt to execute. We start at the top and the officers and executive heads of our major departments form a group which we call the President's Cabinet. There are 24 members in this Cabinet. They meet twice a month, and they discuss every phase of our business. They review performance records as each department head reports them; and they discuss company problems and policies, including labor. Our Industrial Relations Director is a Cabinet member, and, incidentally, reports directly to the president. This Cabinet has developed into a powerful and effective group. All of its members thoroughly understand all of the company's plans and policies.

The second and third line executives belong to a somewhat larger group of about 60, called the Senate. This group meets at least one evening a month. Different members of the Cabinet are invited to speak at these meetings and the minutes of the last Cabinet meeting are read. This is done for the purpose of coordinating the Senate's thinking and actions with the Cabinet's. Free discussion and questioning take place, and frank answers are given on any subject. This group is becoming increasingly effective, and as a result of this plan the members of the Senate make their daily decisions in line with the overall company policies. The role of the foremen in giving us an understanding of the needs of our people and in interpreting company policies to them is extremely important. We consult with the foremen before taking any important action pertaining to the workers; and they handle first steps in our grievance procedure.

All these activities help to tie the management end of our business into a well-coordinated team. This unity of management affects all of our employes. They are more likely to get the correct answer from any member of the management group than they would without this plan, and the plan brings about uniformity of treatment and fair dealing.

## Orientation Must Be Continuous

Not so many years ago many companies followed the policy of giving no information to the newspapers, but today more and more companies are aware of the great value of a good public relations program. The newspapers are far more effective in enhancing a company's standing in the community than a house organ. We run a monthly paper, and furnish the local newspapers with many items of interest about our employes.

It has always seemed to me that the day a man or woman starts to work for a company is a very important one. Years afterward they can remember and tell what happened that day. We have an employe's handbook which we give the new worker. We have tried in this manual to show a friendly attitude to the new employe and to present all rules and regulations from a constructive viewpoint. Each new employe receives a personal interview, in which we try to make him feel at home, and to give him some of the spirit of the organization.

If for any reason an employe leaves us, we try to make even the separation as agreeable as possible. We have an interview with him before he goes, and we attempt to remove all possible ill will.

## Self Respect Must Be Encouraged by Good Housekeeping

One thing which a good many employers neglect is a good program of plant housekeeping, with friendly entrances to the plant, clean floors, clean yards, sanitary washrooms, and sufficient janitor service. Sometimes it is the very simplest human needs which are the basis of labor dissatisfaction.

It is my belief that every employe

is entitled to at least the following facilities in any shop where he may work: first, a decent place to keep his clothes; second, a decent place for him to wash up; third, adequate and sanitary toilet facilities; fourth, proper first aid or hospital facilities; and fifth, clean rest rooms. It is these simple needs, when well provided, which permit the worker to retain his dignity and self respect, and no happy plant conditions are possible without them.

### One Way Municipal Officials Can Help Directly

A factor in labor turnover with which management is increasingly concerned is the all too prevalent lack of adequate housing in decent neighborhoods for workers and their families. Municipal officials can help in the solution of this problem by modernizing their building codes and zoning ordinances. Much can be done also by working with local financial institutions and citizens' groups in behalf of well-balanced programs of public and private planning and action for the improvement of housing and neighborhood conditions.

### Our Plan Works

Labor organizations are aware that great changes lie before us. With the uncertainty of the transition period from wartime production to civilian requirements, they are making strenuous efforts now to fortify themselves for the uncertain period ahead by demands for greater security along numerous lines. Genuine understanding between management and employes will tend to allay these fears and reduce grief in the future for all parties.

We have worked with our union for eight years. Our local which has the bargaining rights is affiliated with the International Mine, Mill, and Smelter Workers Union, C.I.O. During this period we have settled all our differences by ourselves, without outside or government decisions. We have not lost a single day or hour due to work stoppages of any kind. In short, there has been understanding and teamwork between our union, our employes, and the executives of this company.

What is the formula? It is bear ye one another's burden. Be frank and friendly with all. I have tried to embody the idea in this skeleton of a common plan. Can you put it across with your local industrialists and union leaders for the price of a tranquil city? It is worth trying. The right spirit in any community or city can have a very helpful effect on every worker and every factory in it and promote industrial peace.

## Constructive Value of Collective Bargaining

THE CONSTRUCTIVE value of collective bargaining for the general public as well as for labor and management is discussed in a recent Public Affairs Pamphlet, "Your Stake in Collective Bargaining." *

Factual findings and portions of the text of this pamphlet are based on "Trends in Collective Bargaining: A Summary of Recent Experience," by S. T. Williamson and Herbert Harris, a Twentieth Century Fund publication. (See "Collective Bargaining in the Local Public Service" by Mr. Harris in THE AMERICAN CITY for January 1946, page 89, for a condensation of the portions of this book which deal with municipal government, and page 133 of the same issue for a review.

T. R. Carskadon and S. T. Williamson, the authors of this Public Affairs pamphlet, present an assessment of the value of collective bargaining. On the credit side they list: wage increases, standardized pay rates, and enforced managerial efficiency to compensate for pay increases. On the debit side they include increased prices for the consumer, and the discouragement of individual initiative.

The authors, who are associated with The Twentieth Century Fund, feel that collective bargaining can be so developed as to help ensure a larger and more regular output of goods and services, and to maintain higher levels of purchasing power. This can be accomplished only by labor-management cooperation, for which they list the following necessary conditions:

1. Harmonious collective bargaining relations with the union as bargaining agent.
2. Fairly steady production and employment.
3. Abandonment by union of restrictions on output.
4. Joint union-management participation in setting standards of output.
5. Sharing of gains resulting from lowered costs.
6. Full confidence of both union and management that results of their cooperation will not be used to the disadvantages of either.

* Published by the Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York 20, N. Y.

## Promoting Local Industrial Development

CITIES THROUGHOUT the nation are showing new interest in municipal advertising and other methods of attracting peacetime industry, the American Municipal Association reported last month.

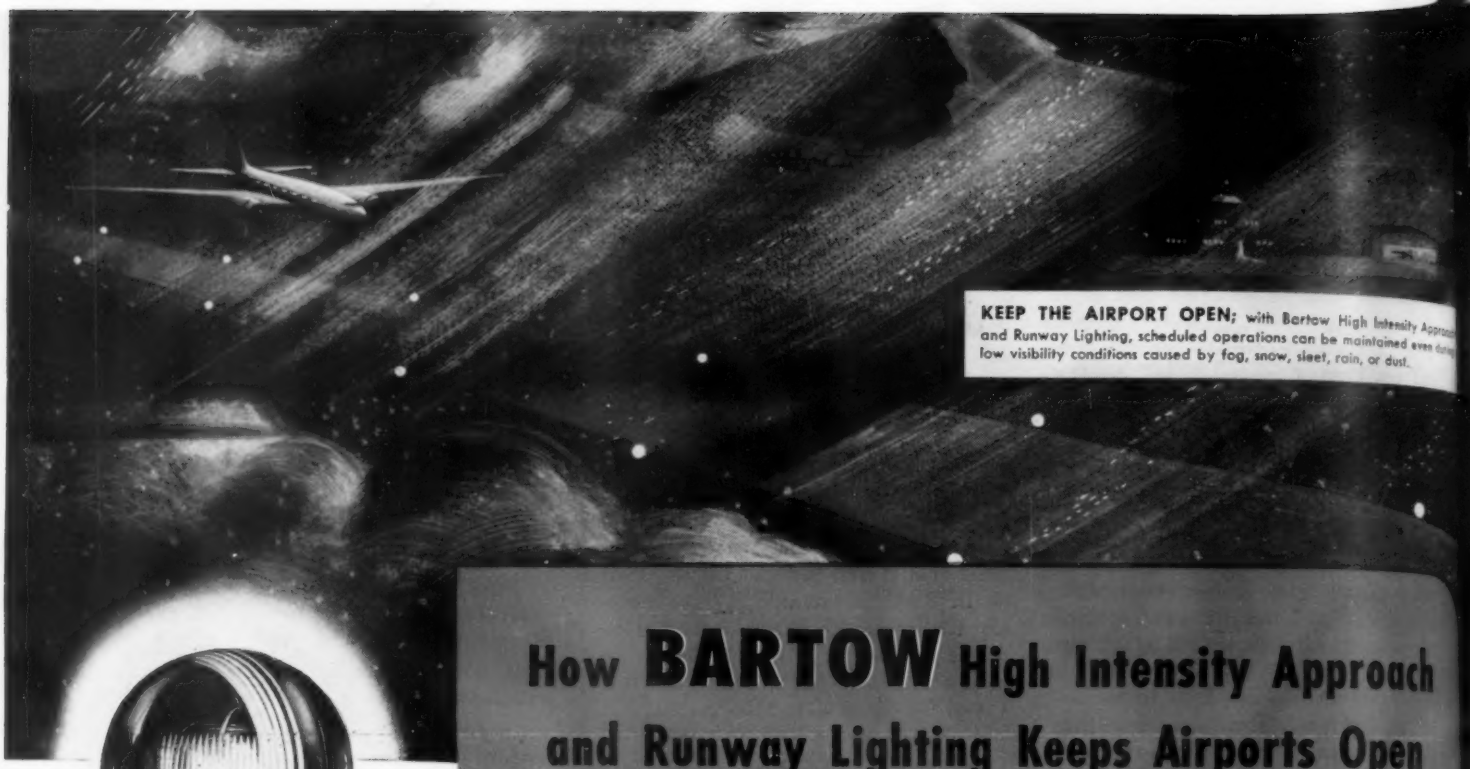
City promotional activities are being initiated on both state and municipal levels. Kentucky legislation effective June 15 authorizes cities to issue revenue bonds to finance acquisition of buildings to be leased to private industries. Several other states, notably Mississippi and Tennessee, previously had similar legislation.

San Antonio, Tex., spends some $100,000 yearly in city funds for promotion. Salina, Kans., recently created a Department of Industrial Development supported by a one-half-mill industrial levy voted last year. The department is headed by a director paid $3,600 a year, who is advised by an industrial development board of 11 men appointed by the city commissioners and serving without pay. Promotional pamphlets to attract new industries are published and aids are offered for boosting productivity of industry already there.

Several cities are engaging in direct advertising by mail. The industrial commission of Cambridge, Mass., for example, recently issued a brochure promoting the advantages of locating industries in Cambridge and outlining the availability of city-owned land for industrial use. Some 20,000 copies of the brochure have been printed for distribution.

Special taxes support boards of city development in several Texas cities. Kearny and Paterson, N. J., also have city-financed industrial commissions. Rochester, N. Y., has a city Department of Commerce, while in Utica, N. Y., municipal promotion is carried on by the city Bureau to Secure New Industries. Iron Mountain, Mich., and numerous other cities have made similar provisions for encouraging industrial development.

Twenty-three states have enacted laws specifically enabling cities to engage in industrial promotion and direct advertising of municipal advantages. Statutory limitations on promotional expenditure by cities vary considerably. In Rhode Island, cities may spend not more than one-quarter mill per dollar of taxable property valuation for promotion, while Michigan cities may spend up to four mills per dollar on advertising.



**KEEP THE AIRPORT OPEN;** with Bartow High Intensity Approach and Runway Lighting, scheduled operations can be maintained even during low visibility conditions caused by fog, snow, sleet, rain, or dust.

# How **BARTOW** High Intensity Approach and Runway Lighting Keeps Airports Open During Low Visibility Conditions

## Here is the BARTOW Beam-Controlled Unit

**Bartow lighting is a system consisting of a number of high intensity units on both sides of the runway or approach. These units utilize extreme high intensity without glare. They are so designed that they may be used as fixed focus with brightness controlled for average visibility conditions, or they may have a remotely controlled variable beam for more efficient operation under lower limits.**

BARTOW high intensity approach and runway lights provide a powerful beam which is scientifically controlled to give maximum penetration and freedom from glare under both good and bad atmospheric conditions.

Landings are made safely, regularly, under low visibility conditions on a Bartow-equipped runway without reducing present proved minimum safety standards. For example, when ground visibility is reported at ⅜-mile, Bartow lighting on the runway increases cockpit visibility to one mile.

## Proved in War—Approved by CA

Bartow Lighting was developed by Bartow Beacons, Inc., in collaboration with well known pilots and engineers. It is manufactured by Line Material Company, which has been known for years as a manufacturer of scientifically designed street lighting and other electrical equipment.

This advanced type of airport lighting has been proved over a number of years of development and tests, and by its highly successful use during the war in the Aleutians, Newfoundland, and other areas where low visibility makes landings tough.

The lighting is today installed at a number of commercial airports, and is on order by others now under construction. It is approved by the Civil Aeronautics Authority.

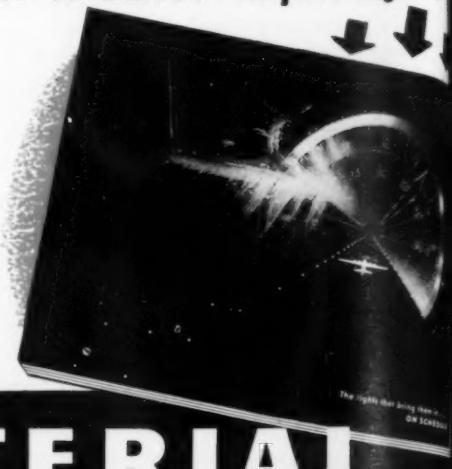
## *NEW:* L-M Rotating Beacon for Class I, II, and III Airports

A new small rotating beacon of advanced design that is unusually economical, light in weight, high in output, and fully approved by CAA. Low cost, easy installation and maintenance are important features. Write for complete information.

## *Get this Authoritative Booklet on Bartow Airport Lighting*

The problem of visibility and landings under low visibility conditions, and the essential coordination of radio approach with visual contact, are highly technical subjects. This new booklet explains these problems simply, interestingly, with diagrams and pictures.

If you are concerned with airport construction or operation, and airport lighting, you should have a copy. Ask any Line Material Field Engineer for a copy, or write Line Material Company, Airport Lighting Division, East Stroudsburg, Pennsylvania. Please write on your official letterhead.



LM

# LINE MATERIAL
## AIRPORT LIGHTING

# Outdoor Lighting

## New Lighting Recommendations Aim at Reduced Accident Toll

NIGHTFALL IMPAIRS the visibility of both motorists and pedestrians. Studies have shown that the traffic fatalities attributable to impaired visibility are, in normal times, about 10,000 a year more than would occur if visibility at night were as good as in the daytime. Under most circumstances prevailing in the United States it is practicable to light urban and suburban streets and more critical sections of highways to substantially reduce this terrible toll of lives.

*Recommended Practice of Street and Highway Lighting* 1945, prepared by the Committee on Street and Highway Lighting of the Illuminating Engineering Society and issued in February of this year, reflects the advancement of the theory and practice of street and highway illuminating engineering since the 1940 issue of *Recommended Practice of Street Lighting*. The 1945 recommendations, which are more detailed than earlier ones, include the following, not covered in the 1940 code: a discussion of luminaire characteristics, recommendations for highway as well as street lighting, specific consideration of pedestrian traffic in determining lighting recommendations, and a utilization efficiency chart for luminaires.

As in the 1940 code, the streets are classified according to volume of vehicular traffic, but the latest code classifies pedestrian traffic as well.

### Luminaires Listed According to Types

Five types of luminaires are listed. Type I gives two-way distribution and is intended for mounting approximately over the center of the street. Type II affords narrow asymmetric distribution and is intended for mounting at or near the side of the street. Type III, intended for wide streets, has medium width asymmetric distribution and should be mounted at or near the side of the street. Type IV, of wide asymmetric distribution, is wider laterally than Type III. Type V, having symmetric distribution, is useful in center parkways and to some extent for intersections.

Average horizontal footcandles for urban streets, ranging from 0.2 to 1.2, are recommended according to both pedestrian and vehicular traffic, and, based on the various initial footcandles. Typical arrangement of luminaires, mounting height and spacing is given in table form. It is to be noted that mounting heights are generally higher than those of 1940.

### Utilization Efficiency Chart

The Utilization Efficiency Chart, presented with the recommendations, affords one practical method for the determination of average footcandle intensity over the roadway surface where lamp lumens, mounting heights, width of paved area and spacing between luminaires are known or assumed. It is available for the various makes and type of luminaires.

Like the previous street lighting code, this edition treats of situations requiring special lighting considerations and discusses the aspects of good street and highway illumination.

The 1945 code includes seven tables and seven figures to supplement the text. Copies of the recommendations are available from The Street and Traffic Safety Lighting Bureau, 155 E. 44th Street, New York City, 17.

## Lights for Operations on Large Airports

***Instrument runway and approach outlined by 120 Bartow lights at the Newark, N. J., airport.***

By ARCHI H. ARMSTRONG
Airport Manager
Newark, N. J.

DURING the war Newark Airport, which before the war had been one of the world's busiest, was operated by the army, which paid the city $85,000 for its use. American, Eastern, United, and Trans Western airlines continued to use it. In November 1945 Mayor Vincent J. Murphy succeeded in having it returned to civilian use.

Regularly scheduled operations were resumed in February 1946 and today there are a hundred flights daily by seven lines. This summer it is expected that flights will reach two hundred a day, placing Newark again in the class of the very busy.

Participating in the flights at the Newark Airport will be a number of DC-4 planes averaging 56 passengers. Two more airlines will soon join the present seven, and there are twenty unscheduled cargo and charter services including Air Cargo Transport Corporation, Slick Airways, U. S. Airlines, Transair, Cross Country and European, Veterans Air Express, Transcarribean, Carribean, and Hoosier.

For the good of the city of Newark and of aviation nationally, the City Planning Board recommends the expansion of the port to its full development of 1,300 acres, including a new terminal area and dual runways. The city's capital expenditures thus far have been $4,623,980 for the field and $847,422 for buildings. The federal government contributed in addition $4,623,980 for the field and $3,054,500 for buildings plus war field expenditures of about $7,500,000. Investment to date amounts to $13,004,500 for the field and $5,471,402 for buildings or a total of $18,475,902. This means about $40 per capita for the citizens of Newark.

### Airport Revenues

Revenues include such returns as Standard Oil of New Jersey's 2½ cents per gallon above sales of 180,000 gallons per year, $2 per square foot per year for office space in the administration building, tie-down space at $3,000 per acre per year paid by ten

# Your Public WILL LIKE PARK-O-METER

## ...and you can have it now!

**The *improved* *UNIVERSAL, **AUTOMATIC Park-O-Meter combines every advantageous feature developed in 12 years experience in designing, building and installing parking meters. That's why they're most modern.**

**Built in our own factory . . . home of the World's first parking meter and the first *Automatic* meter . . . by craftsmen who take pride in production of precision instruments and materials of known high quality. That's why they last longer.**

**Every detail is carefully engineered. Materials are brass, stainless steel and aluminum, selected to assure the most in durability and lasting good appearance. The operating mechanism and timer are *Instrument Grade* throughout. A better parking meter could not be constructed . . . that's all we claim. Who could ask more?**

*UNIVERSAL — May be set for any time and coin combination.
**AUTOMATIC — Completely self-operating; a most modern machine.

SIDEWALK VIEW

STREET VIEW

Park-O-Meter assures your city and your public of every benefit that can be derived from the use of parking meters.

Increased production facilities have permitted stepping up our daily output to bring Park-O-Meters to your city sooner.

Park-O-Meter Invites Comparison With Any Other as to Economy — Public Acceptance — Efficiency — Durability — Appearance.

*Magee-Hale*

**PARK-O-METER COMPANY**

Commerce Exchange Bldg., Oklahoma City 2, Okla.
Macnick Company • Manufacturer • Tulsa, Oklahoma

cargo lines, and $22,000 per year by Air Transport Corporation occupying a double Butler type 320x120-foot hangar.

The Newark City Commission has asked the Port of New York Authority to make a study and submit a report including an offer by June 1. It is expected that the recommendations will be made from the broad point of view that Newark Airport, which was selected by the Hoover Fact-Finding Committee in 1927 as a "must" for the New York-New Jersey metropolitan area, is a valuable and eminently useful public utility property serving a great new industry in the middle development stage. It has been pointed out that airborne business is growing rapidly and that the location is favorable. A main route from the Newark Airport through the Lincoln Tunnel will connect with the bus terminal at 39-40th Streets and 7-8th Avenues, in New York City.

### Lighting the Field with Bartow Units

The field has always been lighted. Originally boundary lights were spaced around the perimeter of the field with floodlights located centrally. In 1943 this system was completely revised. Boundary lights and the floodlights were eliminated and marker lights were installed along the edges (both sides) of the runways. These lights are remotely controlled from the control tower for the runway in use.

A year later the instrument runway was lighted by Bartow lights installed by Line Material Company, Milwaukee. As fog is penetrated by candlepower, the lights to aid landing must not glare into the pilot's dark-adapted eyes. Correct beam control minimizes the possibility of a glare barrage. The Bartow lights have a lamp and lens system providing accurate control of the light beam. The units are about 18 inches high, spaced 200 feet apart, and connected in a 6.6-ampere street series circuit. Installed along both sides of the approach path and runway, these lights provide correct brightness for the pilot in landing or taking off. The intensity can be regulated in five stages, 1, 3, 10, 30, and 100%) from the control tower to conform with conditions of fog.

In first picking up the lights, the pilot sees one or more point sources of light. Approaching, he sees a number of the lights in each row and each light appears to be of equal brightness, The perspective outline of the runway is normal so that a straight-in let down landing is possible.

The advantages in safety to passengers and plane are obvious, as are also the economies in making possible air service under fog conditions.

*Photograph of Bartow units taken in light fog 20 feet above ground on straight-in let-down procedure.*

*Lights along approach path and runway provide correct brightness.*

# Los Angeles Parkway Lighting

By **WILLIAM E. LAUER**
**Street Lighting Engineer**
**Los Angeles, Calif.**

PROPER lighting is necessary to the maximum efficiency of controlled-access highways. The accompanying plan for the Los Angeles parkway entrance shows a design and method of providing safety lighting at so-called danger points at which traffic divides, part of it turning off the freeway to reach another freeway or leaving the system to continue the journey on some surface street. As illustrated, the safety lighting arrangement at such points includes these elements:

1. A blinking or intermittent flashing beacon at a comparatively low level to indicate diverging traffic lanes.
2. A reflector device illuminated by the headlights of approaching vehicles.
3. A standard overhead luminaire designed to light the road surface evenly so that objects or obstructions will be silhouetted against a brighter background.

Freeway lighting must be specially designed to fit each particular artery. The greatest benefit can be derived by providing a uniform degree of illumination throughout the length of the freeway, modifying it by the expected intensity of night traffic between certain points.

Visibility requirements for the Los Angeles parkway were determined by a study of the estimated volume of night traffic. Inbound traffic on each freeway was determined by surveying all radial streets and public transit lines during an average business day then allocating the traffic to the radial

# RIGHT HEIGHT

## New Steel Pole Puts Light Where It's Needed for Greatest Utility

UNION METAL'S new street lighting standard meets every requirement of the I.E.S. street lighting code. It was designed by illuminating engineers to provide light at the right height for maximum illumination and at minimum cost.

Engineered in standardized heights to reach nominal light centers of 20, 25, 30, 35 and 40 feet, these new tapered *steel* poles facilitate wiring—are simple to install, low in maintenance cost, attractive in appearance. Also the new, improved 45-degree upsweep bracket in 4, 6 and 8-foot lengths with supporting scrolls, or 10, 12, 15 and 18-foot mast arms with top side-sway bracing.

Wherever transformers are needed, a fabricated steel transformer base can be supplied. This increases the overall height by 20 inches.

For catalog or additional information, write to The Union Metal Mfg. Co., Canton 5, Ohio. We will also be glad to send you free a copy of the Illuminating Engineering Society's new street lighting code.

**You couldn't buy a better product to save your life**

# UNION METAL

*Largest Producers of Street Lighting Standards*

parkways by dividing contributory areas between routes. Night use was assumed to be approximately one-third of day traffic. None of the parkway routes have been allocated less than twenty installations per mile, which is the desirable minimum based upon a light distribution of 142 feet each way from the light standard.

## *Photoelectric Control for Multiple Street Lights*

INDIVIDUAL photoelectric control of multiple street lights permits a choice of the illumination level at which it is desired to turn on the lights. Each street light so controlled goes on at the same value of illumination, day after day, regardless of its specific location, the weather, or obstacles in the vicinity. Even under the unusual conditions of underpass, overpass, or extremely shady areas, the lights are turned on when the decreasing illumination requires it.

There has been considerable interest on the part of progressive electric utilities in an automatic photoelectric control system for multiple street lights, because a line failure in a series street lighting circuit takes out every street light in the circuit and considerable time frequently elapses before service is restored. On the other hand low-voltage multiple system failures are rare and affect only a very limited area.

The saving in costs of an individually controlled multiple street lighting system, as compared with the series system varies with the problem of each utility. A low voltage multiple system usually eliminates the investment in special high voltage wires, constant-current series street lighting transformers, and accessories. It permits the use of poles with shorter cross-arms and reduction in insulators. If an average of $30 a kw for the transformer is used, and 100 watts per street light for the lamp load, then the investment per lamp in transformer alone is $3. For high wattage luminaires, this can easily rise to between $5 and $10 a lamp.

An outdoor light control for avoiding duplicate power networks on new lighting installations, and to permit extension or conversion of existing series networks has been developed by Fisher-Pierce Company, Boston 31, Mass. The unit is mounted on the distribution pole with lag screws or bolts and wired to the distribution systems and to the street light or lights to be controlled. The lamp is turned on by the time north sky illumination is reduced to any preset value between ½ and 6 foot candles. The light is turned off by the time the light intensity reaches 2 foot candles more than the turn-on point. A time delay of 15 seconds is incorporated in the circuit so that the unit will not be turned off at night by lightning or passing lights which might focus on it. The light is left turned on in the event of functional failure. In case of surge-induced or shorting failure, the control unit is fused at 15 amperes and will remove itself from the distribution line in 1 to 3 seconds. The unit consumes 6-7 watts.

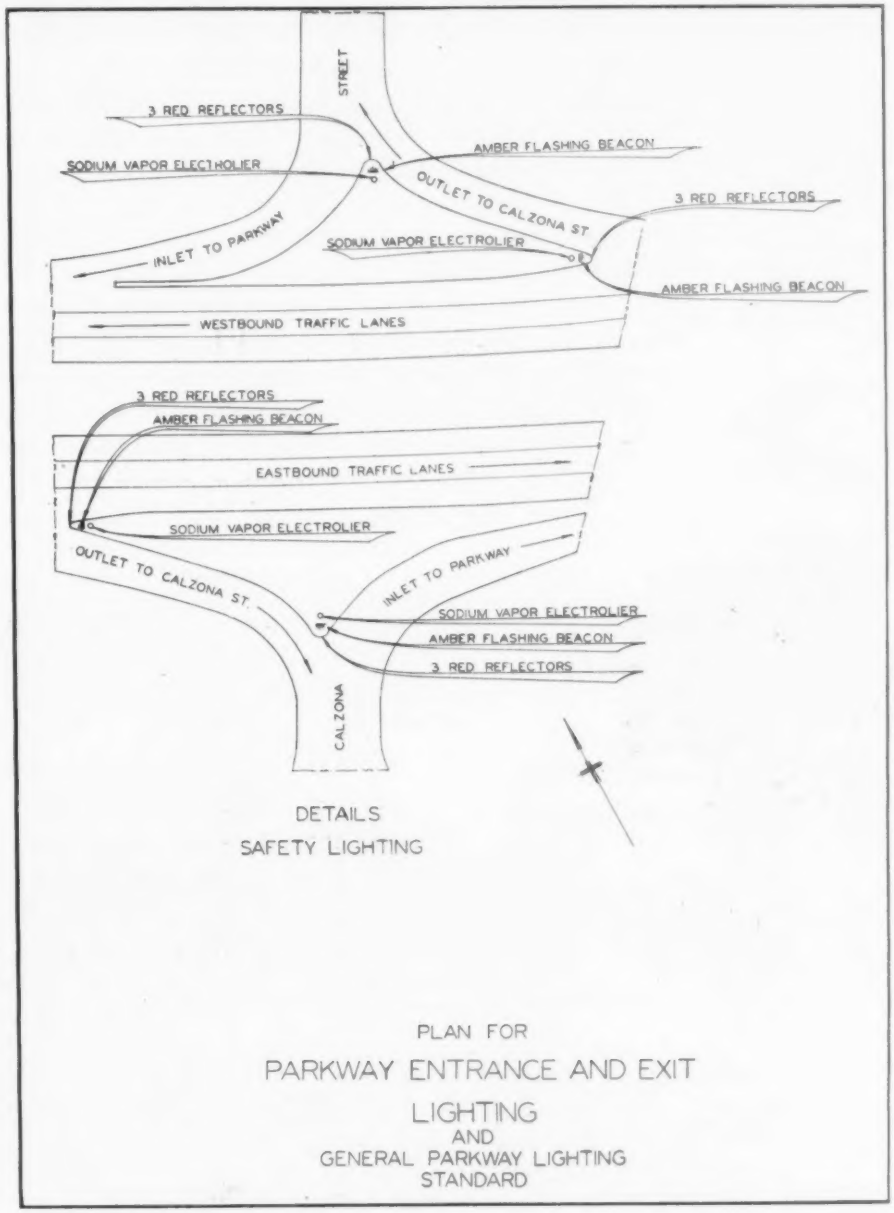
## *New Type of Sports Floodlight Used at Yankee Stadium*

A NEW TYPE of General Electric sports floodlight was used for the first time to light the Yankee Stadium in New York City at the opening of the 1946 night baseball season in May. The game was the Yankees' first at night.

The new units, 1,245 in number, provide an even spread of 200 foot-candles over the entire field, giving the stadium nearly double the lighting of any other ball park now used for night baseball. Designated as the Type L-69, the floodlight is also adaptable for all sports fields and recreation areas that require lamps of 750- to 1,500-watt sizes.

The window of the floodlight is made of impact resistant, tempered glass. Though only ¼-inch thick, it is virtually "baseball-proof." In recent tests, the window refused to break even when sandlotters rained baseballs at it for half an hour.

The new floodlight is dirt, weather, and insect proof.




*Safety lighting at the danger points of the Los Angeles parkway.*

# IT'S PUBLIC TRANSIT 9 to 1

## ...with Washington, D.C. shoppers!

A survey made last year in the area served by Washington's Capital Transit Company revealed that 91 per cent of those who shop downtown depend on public transportation. Only three per cent use automobiles. These facts prove that the great mass of business is done by persons using mass transportation.

If many of the thousands who now ride in automobiles would regularly use public transit, each of these persons would occupy only 70 square feet of street space instead of 500 square feet. The 430 square feet released per person would speed up considerably the entire traffic system. Then all people, including the automobilists who *need* to use their cars for daily travel, would get where they're going much faster. If off-street parking facilities were provided for the remaining motorists, additional street space—240 square feet per car—would be released. This would reduce still further the number of vehicles on the streets, and again accelerate the movement of the city's lifestream.

Retailers, property owners, transit and automobile riders—everybody benefits when people and goods can move swiftly and easily throughout your city streets. That's why you should support measures to free the streets where necessary for the faster movement of everyone. And that's why you should work closely with your transit company to obtain the best in urban transportation at lowest cost to riders and taxpayers.

*Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

107-167-9560

Have you seen

**LIFESTREAM OF THE CITY**

the new movie on urban transportation? Ask your G-E representative how you can arrange for a showing.

# Traffic Paint That Shines at Night Makes Night Driving Easier and Safer

By ROBERT A. MITCHELL, Chief
Bureau of Traffic Engineering
Philadelphia, Pa.

SINCE EARLY 1942 night driving in Philadelphia has been made easier and safer by a traffic paint embedded with small glass beads to reflect the light from automobile headlamps. The paint, purchased originally as a wartime expedient for guiding traffic in dimouts, has been of particular value because of its reflecting quality and its exceptionally long life.

The Philadelphia Bureau of Traffic Engineering uses a glass-beaded paint known by the trade name of "Prismo." We have been paying a little over $3 per gallon for the paint and glass beads—approximately twice the cost of other good grades of traffic paints; however, our experience has justified the extra cost. The long life of the paint makes it necessary to put down traffic lines only once a year, thus reducing maintenance expense.

*A Kelly-Cresswell spraying machine.*

Prismo's staying quality depends a great deal upon the type and time of application, the cleanliness and dryness of the street surface, and the correct proportioning of beads to paint. Best results are obtained when a power-driven spray machine is used to apply the paint and beads. The paint is sprayed on the street surface and the beads are dropped into the wet paint through a hopper or dispenser. The force of the spray cleans the street surface as it is being painted. Several types of paint spraying machines are available for this sort of job. The Philadelphia Bureau uses a Kelly-Cresswell machine.

*Lines and letters of Prismo reflectorized paint on Roosevelt Boulevard, Philadelphia. The paint in this picture and the one below has been down about two months. In both cases the only light source is the headlamps of the cars.*

Unless all old, dry paint is cleaned from the apparatus and unless the proper mixture of paint and beads is maintained, the application will not be satisfactory. For best results, six pounds of beads should be evenly distributed over each gallon of paint.

Atmospheric conditions and temperatures also affect the results, but these factors must be considered in the use of practically all types of traffic paint. If there is too much moisture in the air, the traffic paint will not dry properly; therefore, it should not be applied in the early morning or in the late afternoon except on warm, sunny days. Neither should it be put down at night nor in temperatures below 45°.

Four men with a motordriven spraying machine can put down Prismo glass-beaded paint for about three cents per foot for six-inch center or lane lines and four cents per foot for six-inch crosswalk or limit lanes.

### Night Fatalities Down

Reflectorized traffic paint can contribute largely to the reduction of night traffic accidents. In Philadelphia the use of the glass-beaded paint has been the most important factor in cutting the night accident toll. Since early 1942 no change has been made in street lighting and few traffic signals have been installed, yet fatal night accidents in which only vehicles are involved have decreased steadily.

*Lines, letters, and arrows of Prismo paint on Roosevelt Boulevard. This photograph is a time exposure and the bright streaks are the headlamps of other automobiles. They are not street lamps. The camera is set inside the car.*

# Better Metered Parking

## Developed by DUAL

WHEN Dual Automatic Parking Meters established their popular leadership before the war by serving more American cities than any other two makes combined—they also accepted the responsibility of developing better metered parking. That's why Dual engineers, as soon as war restrictions were removed, began research to improve Duals in design, construction and performance.

Today, Duals show the results of that effort by incorporating important engineering improvements. The new streamlined design is attractive, weather-proof and tamper-proof. Meter mechanisms, now manufactured by the makers of the famous Seth Thomas clocks, are dependable and long lasting. Duals are easy to install and operate, economical to service and maintain.

Learn how Duals can serve your community profitably. Write for the attractive free booklet—"Metered Parking—Today's Answer to Tomorrow's Traffic Control Problem", or call on our engineers for friendly analysis of your needs.

**THE DUAL PARKING METER COMPANY**

***A subsidiary of The Union Metal Manufacturing Company***

**HARTER BANK BUILDING • CANTON 2, OHIO**

*When it Comes to Controlling Parking....*

*You can do it better with DUALS*

In 1941 Philadelphia had 25% more such accidents at night than during the day, but in 1945, three years after the reflectorized traffic paint was introduced, the percentage was down to 16. For the first four months of this year, with vehicular volume equal to that of 1941, vehicular fatal accidents during the day outnumber those at night.

## *New Street Cars for Kansas City, Mo.*

AFTER years of service prolonged by the war, Kansas City's old timers are being retired now that the first of 175 new PCC street cars have been put into operation.

The new cars, each costing nearly $22,000, represent an investment of over $3,750,000. They are, however, only a part of the Kansas City Public Service Company's huge modernization program involving an outlay of about $8,000,000 and including the purchase of some 362 new vehicles—street cars, buses, and trolley coaches.

The cars are streamlined with the front windshield sloped at a 20-degree angle to eliminate glare for night driving. In addition to a bright spotlight, there are two smaller lights pointing down in front of the car.

Inside the control panel is a series of buttons and small levers which will permit fingertip operation of the vehicle. Gone are the air brake and door levers and clanging bells; everything is run by electricity. The panels are painted a light pink, offset by blue sun shades at the tops of the windows, which can be lowered or raised by a handle. New lighting is designed to give approximately twice the illumination obtained in older cars.

The removal of four seats from the earlier model has provided more standing room, yet the new car has two to six more seats than the old type used on other lines. These cars, named for the President's Conference Committee, a group of street car railway heads who pioneered in the design work, were built by the St. Lonis Car Company, St. Louis, Mo.

# Cooperation in Transit Problems

**By JOHN L. WILSON, President**
**St. Louis Public Service Co.**

IN OUR modern cities, people must move; they must travel to and from their homes to their places of employment, to shopping areas, recreational centers, and the homes of their friends. An efficient mass transportation system is one of the city's greatest assets.

There are in transit service many problems which can be solved only through complete cooperation and confidence on the part of both the transit companies and the cities. St. Louis is an example of what such mutual confidence and cooperation can accomplish.

At the end of the war St. Louis faced a grave problem. The population of the city and adjacent suburbs had increased during the war years by many thousands, and the demand on the transit system had risen accordingly. Then, as restrictions on gasoline and tires were removed, traffic congestion was greatly augmented, with the subsequent threat to transit efficiency. Both city officials and traffic company executives realized the urgency of the situation, and through combined efforts have made substantial progress toward solving the problem.

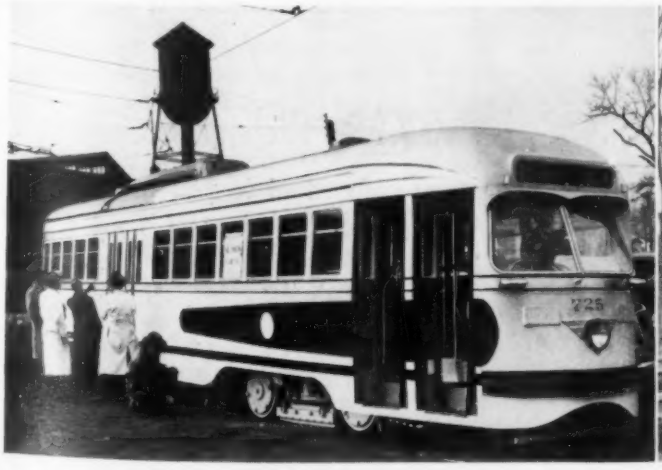
Express buses which save up to 34 minutes a day for customers have been inaugurated with adjusted fare schedules. Buses have been substituted for street cars on eight lines and some of the lines have been consolidated. Complete re-routing in the downtown area, worked out by the city, the City Plan Commission, the transit company, and the downtown merchants and business groups, has improved service and reduced travel time.

By authority of the Board of Public Service, the transit company started a downtown 5c loop bus service to operate in all directions. Moving on a 5-minute schedule, these buses serve the parking areas on all sides of the business area.

### Profit Essential

A city transit system must have a profitable operation to render the type of metropolitan service necessary to the growth of a progressive American city. In St. Louis, where we have been making money, a major portion of our revenue has gone to improve service. We have invested future as well as past revenue, and as a result Greater St. Louis will have 524 new buses and 100 new streamlined street cars added to the present equipment at a cost of approximately nine million dollars.

The transit industry is a volume business. During the war when passenger volume was high, profits were good; however, operating costs also increased. In the pre-war period, for example, new 40-passenger buses cost $10,000 each. Today they cost approximately $14,500. New street cars were $17,000; now they are $22,000. In the pre-war period operators' wages alone were 96 cents per hour for every hour a transit vehicle was on the street.




*The first of the new streamliners to reach Kansas City is carefully inspected by representatives of the Kansas City Public Service Company.*

*Veteran of 44 years' service on Kansas City streets, Car No. 103 is about to be shipped off to the junk yard. One of the new PCC cars stands by.*

# For Greater Highway Safety!

## Check These Prismo Bulletins

√ BULLETIN 461—"PRISMO—THE SPHERE OF SAFETY"

This bulletin describes graphically the use of Prismo for centerlines, pavement markings, signs, markers and sundry specialty lines. Prismo Sphere Dispensing Equipment is illustrated as well as laboratory procedures at the Prismo Laboratories. Write for Bulletin 461.

√ BULLETIN 4512—"PRISMO LIFE-LINE"

A supplementary bulletin on Prismo's famous reflective centerlining paint used throughout the country. Write for Bulletin 4512.

√ BULLETIN 443—"PRINCIPLES OF REFLECTORIZATION"

A treatise on the principles of reflectorization developed and technically presented by the Prismo Laboratories. Ask for Bulletin 443.

√ BULLETIN 244—"IT'S EASY"

The Prismo Sign Kit permits easy, economical reflectorization of signs both embossed and flat. Spraying reflectorizing materials on existing signs is outlined in Bulletin 244.

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# Then . . . For Your Lighter Moments!

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ASK FOR:—

## THE PRISMO COCKTAIL MIXER sliderule

A non-technical gadget that will provide hours of enjoyment to you and your friends.

## THE PRISMO SAFETY CORPORATION

HUNTINGDON . . . . . PENNSYLVANIA

Today the cost is $1.32, an increase of 37.5%. Our fare is the same. Nevertheless, we have prospered, solely because of the large volume of passengers we have handled. To give fast and efficient service and provide extension of lines which are in constant demand, a transit company must continue to buy new and modern equipment in large quantities. To do this, it must operate at a profit.

### Importance of Volume to Transit Operation

Should our volume decrease to any extent, we must have either a reduction in taxes, which would in effect be a subsidy to the transit company by the city, or a fare adjustment upward. Maintaining a high volume of passengers on transit lines is, therefore, essential.

In planning arterial traffic ways and other city projects, maximum consideration must be given to the movement of mass transportation vehicles. In the past perhaps too much consideration has been given in the urban areas to the movement of private vehicles, which statistics show to be the minority group insofar as the number of persons moved is concerned. If, through city planning, the movement of transit vehicles can be expedited to speed up the service, thereby reducing travel time for customers, a large percentage of the present volume can be retained. Transit companies will then in all probability be able to operate at a profit and provide the transportation necessary to the efficiency of a city without either a reduction in city taxes or increased fares.

## *Planning a System of Balanced Transit for Municipalities*

PLANNING officials, in their traffic studies, should keep in mind that a balanced local transportation system can be developed only from a realistic appraisal and combination of all forms of transportation, John M. Picton, Chief Planning Engineer, City Plan Commission, Kansas City, Mo., advises.

The problem is to expedite the movement of persons and goods, not one certain type of vehicle only. Emphasis should be placed on securing the best and most economical means of transportation in each case.

A balanced local system depends to a large extent upon mass transportation facilities for the rapid movement of large numbers of persons. Preliminary studies now being made to determine anticipated traffic volumes on proposed express highways indicate the importance of increasing the use of transit facilities. If downtown parking facilities are to handle the load adequately, passenger car volumes must be reduced. The design of express highways should include provision for mass transportation vehicles; otherwise, greater expenditures will be necessary to provide additional off-street parking facilities.

"If we would spend more of our time in selecting the most economical means of transportation and studying ways and means of achieving a proper balance between types of transportation, we would probably be able to recommend plans and programs at half the expense and do twice as good a job with the funds we will undoubtedly contemplate spending on highways and essential terminal facilities," Mr. Picton maintains.

## *Buffalo Reports on Traffic and Lighting*

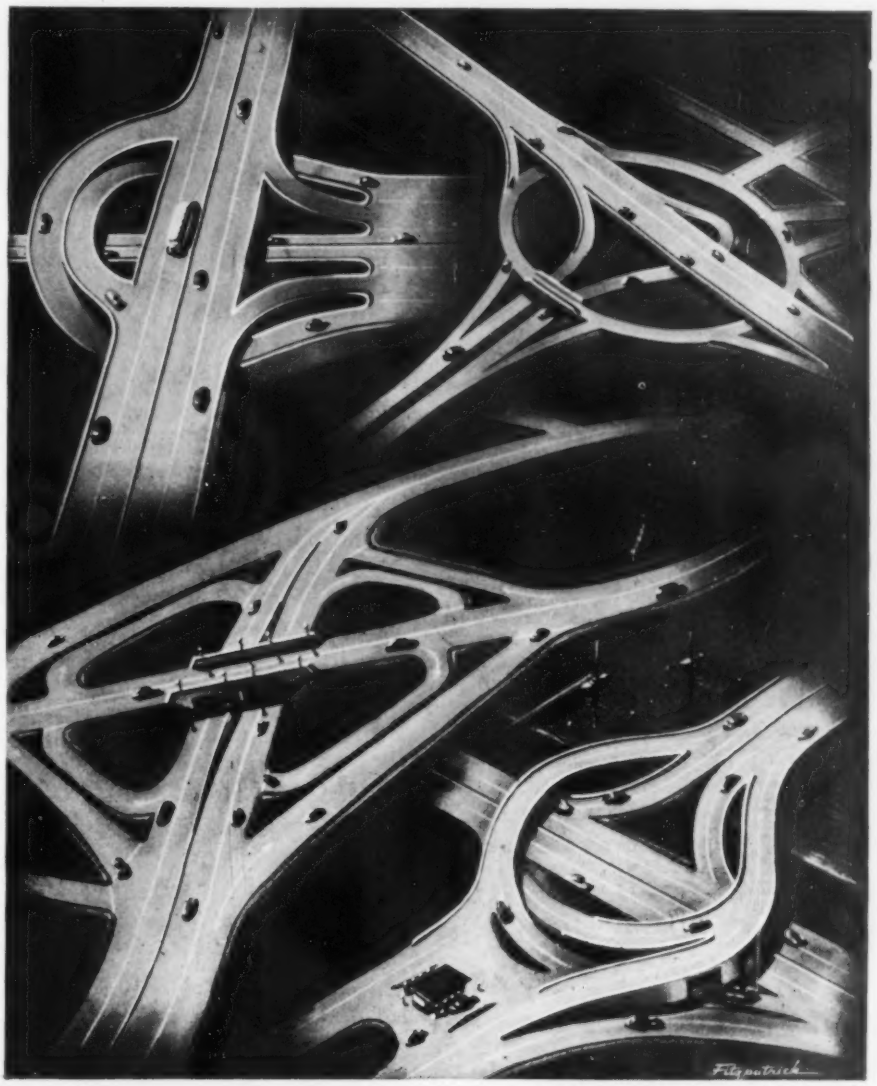
WE HAVE just completed a report on parking meters which will include specifications, proposed additional locations and sundry information related to their installation.

In addition we are also working on a detailed report of our traffic control signal needs which will be submitted to the council in July so that a bond issue can be floated to carry out the plan.

Incidentally, we expect delivery of 55 street light poles for our experimental installation on Main Street. This will be the sales display for putting in motion our proposed $400,000 street lighting modernization program.

HENRY W. OSBORNE
Traffic Adviser, Board of Safety
Buffalo, N. Y.

## *Highways of the Future*



PHOTOGRAPH COURTESY OF "STEELWAYS"

*Thinking in terms of safety, beauty, and harmonious settings, modern designers plan highways like those above for motorists of tomorrow. These well-planned highways will prevent traffic congestion.*

FOR BETTER TROLLEY COACH PERFORMANCE

# SPECIFY *Electrocam* Control

## ✓ *Electrocam* PERMITS SIMPLIFIED LINKAGE

On *Electrocam*-equipped coaches, simplified linkage between the operating pedals and the accelerating and braking controllers reduces weight and installation cost . . . eliminates troublesome rod adjustment.

This is accomplished by mounting the *Electrocam* controllers at the front of the coach (shown above). Instead of requiring the use of long pull rods, these controllers establish low-voltage electrical connections between the 12-volt source of power and the operating coils of the control equipment mounted in the rear or side compartment. Friction of the long rods and their supports is also eliminated, therefore, the pedals can be operated with minimum effort.

Simplified linkage is only one of the many operating features of *Electrocam*. For full details, see your Westinghouse representative, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh, Pa. J-15118

Electrocam Features:

- ✓ Permits simplified linkage
- Provides maximum accessibility
- Accelerates smoothly . . . instantly
- Maintains steady pace in traffic without shutoff
- Eliminates jolts and jars with cushioned power shutoff
- Improves brake performance with extended dynamic braking
- Removes source of line voltage leak by using low voltage control
- Makes contactor and limit relay parts interchangeable with our former standard equipment

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

*Electrocam*

SERVING THE TRANSIT INDUSTRY

# How Dallas' Sanitary Fill Program Works

By G. C. BRINKLEY
Superintendent
Sanitation Division
Dallas, Texas

THE SANITARY fill program enables Dallas to dispose of its garbage and refuse at a cost of $0.435 per ton. The Sanitation Division operates six sanitary fill sites within the city limits and employs one dump foreman and 25 men in this work. The equipment consists of three Bull-clams, three bulldozers, and one dragline. People owning low land, gravel pits, or creek bottoms which they desire to have filled, grant free use to the city for dumping garbage on the property. During the day the crews dump and pack the garbage and at night they place six inches of dirt over the day's haul to keep down odors and keep away flies. When the operations fill a low area to the desired level, the crew then covers the fill with 18 to 36 inches of dirt, and returns the title to the owner.

*Dallas prefers this closed packer-type truck body for its refuse collection.*

### Incinerator for Small Animals

The city also operates one incinerator to dispose of small animals picked up daily from the properties of Dallas. We include the operating cost of this incinerator in the $0.435 price previously noted for sanitary fill costs.

In the Sanitation Division of the Public Works Department, there are 225 men under the supervision of six foremen. At present we have 47 trucks and 19 wagons handling garbage but we plan to replace the wagons with trucks as soon as trucks are available. Of the 47 trucks, 42 are open and 5 have the Grace packer-type bodies. Each truck is manned with a driver paid 79 cents per hour and either two or three laborers, depending upon the type of service, paid 71c per hour.

Residential areas receive service twice weekly, businesses in residential sections are given service four times weekly, while the main business district receives daily collection service. The work in the business district begins at 2:30 p.m. and continues until about midnight. Alleys have been provided

*By thoroughly compacting material and levelling it with a Bull-clam equipped with a tractor the operators are able to produce a dense solid fill that will even allow trucks to work on it. Notice the finished fill in the background.*

# *Good street lighting...*

## *the sign of a good place to live*

PEOPLE are proud of their home neighborhoods. They want to see them looking well all the time . . . . by night as well as by day.

What other public service caters so much to this natural human trait as good street lighting?

Good street lighting not only increases real estate values and gives people a greater sense of security, but also it builds civic pride, attracts new and desirable citizens, promotes business and encourages industry. In accident and crime reduction, alone, it pays for itself many times over.

In most communities, existing street lighting installations fall so far short of minimum standards that any improvement will attract wide and favorable attention.

Why not grasp this opportunity to be a leader by sponsoring better outdoor illumination in your community? Your electric utility company will be glad to help.

For a free copy of the new Street Lighting Code of the Illuminating Engineering Society which gives you unbiased information on minimum street lighting standards, write The Street and Traffic Safety Lighting Bureau, 155 E. 44th St., New York 17, N. Y.

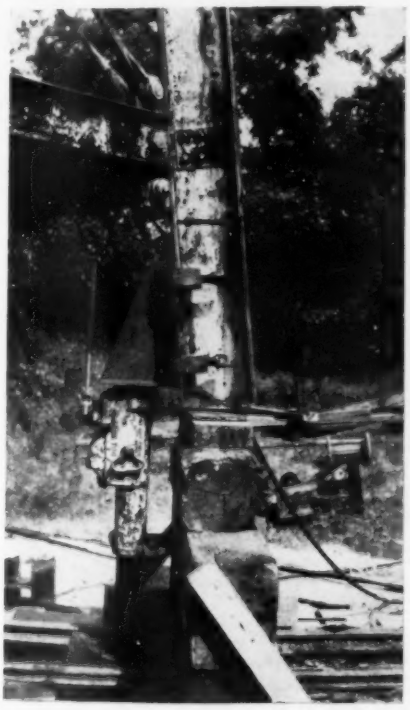
**GOOD STREET LIGHTING WINS PUBLIC GOOD WILL**

throughout most of Dallas and about 80% of our collection is from them. Of the remaining 20% the householders still place the containers at the rear of their property, and the garbage men go back after them. We collect brush from the front of the property.

Between October 1, 1945 and March 31, 1946, the city disposed of 69,422 tons of garbage and 103,783 cubic yards of brush. By matching our budget for the year of $597,629 against our population of 423,000 this makes a per capita cost of $1.413 for collection and disposal of garbage, brush and dead animals. This includes the $0.435 per ton figure which covers the sanitary fill operations.

# Charleston Lowers A Water Tank

***A water tank in a Charleston, S. C., suburb had to be lowered forty feet when the suburban water system was connected with the city's.***



*This close-up shows the jacking arrangement used to lower each leg. Notice that the leg is now suspended about two inches above the supporting pumps.*

WHEN Charleston, S. C., began distributing water to Windermere, a suburb with an inadequate supply, officials discovered that the suburb's water tank was too high to fit the hydraulics of the Charleston system. A safe, conservative way to correct this difficulty would have been to tear the tank down and rebuild it, but James Gibson, veteran manager and engineer of Charleston's water department, decided that there must be some easier way.

After studying the situation, Manager Gibson decided to attempt to lower it by means of jacks. Water department engineers calculated where the foundations would be required with the legs shortened, and then the contractor undertook his unique task.

The work required four 85-ton hydraulic jacks. The base of the jack was welded to an adjustable base plate and the upper head bore against a short supporting member that was clamped to the legs of the tower by ¾-inch set screws. Nuts welded to the face of the supporting member kept its alignment true with the tower legs. The baseplate that supported the jack was carried between a pair of rails that held it rigidly in place and allowed it to slide to the center as the tower came down. Rails and base plate were carried on a heavy timber underpinning that rested on the leg foundations.

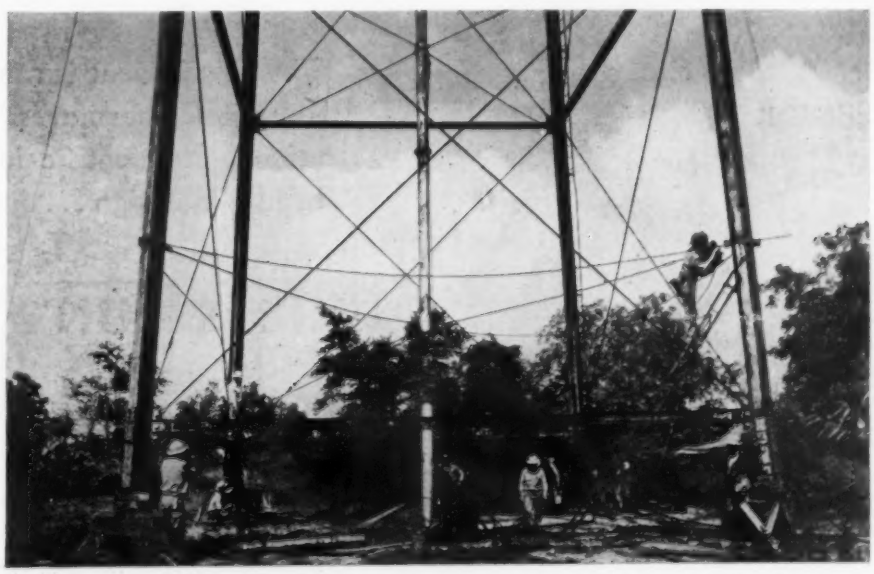
### Cut 16 Inches Off Leg

With the jacks in place, the contractor raised the tower slightly, cut about 16 inches off the legs and then lowered them to a set of timber supports. Then he extended the jack, reclamped his supporting members, and repeated the process. Cross bracing was burned away as the tank descended. Rods welded to the legs supported the riser pipe during the operations.

*James Gibson, Superintendent, and F. B. McDowell, Jr., Assistant Superintendent of Charleston's water works have guided Charleston's water history through its interesting career marked by such significant highlights as the pioneering use of cement-lined iron pipe, the courageous development of the Edisto River supply, and one of the first installations of a 2-mg overhead storage tank. This was constructed not as a water works oddity but solely on the basis of accurate distribution studies.*

### Cost Data

The cost of the work came to something less than $8,000 and, as Superintendent Gibson puts it, the contractor went away well pleased. The best estimate that could be obtained for the dismantling and reassembling alternative ran to more than $10,000.



*Lowering the Windermere overhead tank to fit it to the Charleston distribution system.*

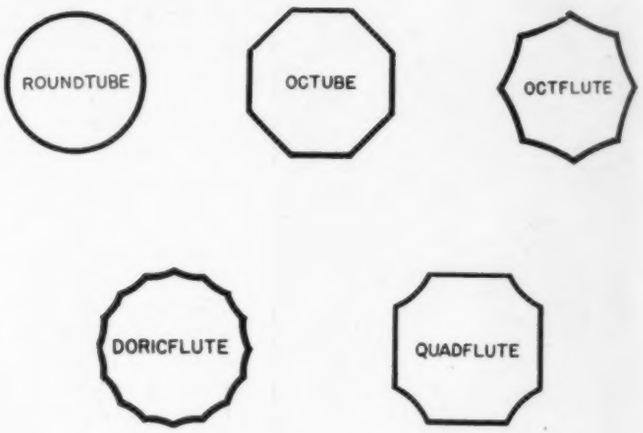
# *DAUNT STANDARDS*

## *FOR*

# *MODERN STREET LIGHTING*

DESIGN L-2360

**Tapered pressed steel or aluminum . . . Design of various shapes**




*and*

# *Daunt Luminaires*

SENIOR
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**This Equipment is a most modern advance in lighting public thorofares. . . . It is a threefold combination . . . scientific in construction . . . grace and beauty in design . . . durable light weight material . . .**

**THE DAUNT CORPORATION**

ESTABLISHED 1931

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# Zoning and Planning Notes

Edited by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

# Airport Zoning

IN THIS AGE of aviation the air may be likened to an ocean which man may navigate from his door step to any other point on earth. Analogies are illuminating, and misleading. This is indeed just what any man may do when once he is in the upper air, and until he is over his point of destination. The trouble, however, is starting and stopping: or the airport and its approaches.

The great Coke in 1634 said "He who possesses the land possesses also that which is above it"; and in those early days others asserted that this possession extended to the heavens above and the uttermost regions below the surface of the earth. These assertions were *dicta*—statements which were not the basis of decision in any case in court; and until the advent of the airplane there was no occasion for such a decision. The reference was not to the air but to the space filled with the air. This space may be possessed; the owner of vacant land may build in it: the owner of a building may buy the right to the access of air and light over an adjacent vacant lot. But no man can own what he cannot possess. Free circulating air, like freely running water, is not the subject of ownership; the land owner may have the right to have a stream continue to run through his land, but does not own the water until it is in his tank or irrigation ditches. Wild game, until confined or killed, has no owner; the right to forbid trespassers to hunt is a totally different matter. Land under navigable water near shore is often owned, but never land under the ocean depths.

## Need for Adequate Airport Approach Protection

There is much still undecided in the law of aviation. It has now been determined that the upper air space, like the ocean waste, is not subject of ownership, and is wide open to reasonable use of the aviator; but with regard to the space more immediately above the approaches to the airport and other questions with regard to its environs, there is still uncertainty. For this reason three papers worthy of comment on phases of this subject which have recently appeared, are of timely interest.

The first is by John W. Reps of Springeld, Mo., entitled "Airport Zoning," and is a good review of the entire subject, with an excellent bibliography. The author in his final paragraph summarizes his paper as follows:

"The growth of air transportation, technical improvements and airport requirements have created a problem of some magnitude for our cities. In response to the need, legislation has been passed in a majority of the states. No final answer has as yet been put forth, nor is it likely to be. The need for adequate airport approach protection is and will be a continuing problem, and the best efforts of planners will be required to meet the needs of the future. Zoning through the police power is the most promising method of furnishing the desired control, and its use should be encouraged and promoted."

## Effect of Airports on Surrounding Property

The other two papers were read at the recent conference in New York of the American Society of Planning Officials, and will no doubt appear in its proceedings. The first of these papers is by J. S. Bayard, Jr., who has been engaged recently in preparing an airport plan for the Detroit Metropolitan Aviation Planning Authority, in connection with which he has made extensive investigations. His paper is entitled "Effect of Airports on Surrounding Property." The author starts by saying modestly:

"I am not going to attempt to present an analytical study of this subject because as far as I know there is no material readily at hand to analyze. I grant that this is a ripe field for some fundamental research and firmly believe that such work would be a signal contribution to the basic data necessary for proper airport planning. Therefore, I plan to limit my discussion to a preliminary analysis of the problem evaluating the effect of airports on surrounding property with a view toward shaping up a procedure or plan for this purpose."

The author divides the different airport area requirements into four classes, served by four types of airports: major, intermediate, and minor airports, and personal flying fields. Each of these types—varying in size from perhaps 40 to 2,000 acres, in the required landing angle from 1 in 7 to 1 in 40, and in distance from the built-up community which it serves—has a different effect upon surrounding land. The author states that in many cases there is depreciation of values of neighboring land, but that sometimes there is appreciation, and adds, as the results of his investigations that:

"*Major airports* located at or outside the present fringe of urban development will have no depreciating effect on rural land value, nor will they have a depreciating effect on scattered residential sections. On the contrary, they may stimulate some residential development of a moderate-price class and some small commercial centers. The reason for this latter effect is that a large airport employs a considerable number of people, many of whom feel a need to live within a short distance of their place of employment. Demand for such accommodations, therefore, will produce an increase in scattered residential development up to the point where the needs are fully satisfied. Experience, however, seems to indicate that no further considerable residential development not related to airport employment is likely to occur."

## As Seen by the Civil Aeronautics Administration

The last paper to be reviewed is that of John M. Hunter, Jr., Director of Airport Requirements Service, Civil Aeronautics Administration, Washington, D. C. It is entitled "Problems of Airport Zoning," the causes of which are stated by the author as follows:

"According to the airport approach standards of the Civil Aeronautics Administration, an airport other than one which is so small as to be suitable only for light personal aircraft, if it is to accommodate modern planes wtih safety, must have aerial approaches or airspace channels extending at least 2 miles from the ends of its runways or landing strips, within which an airplane can descend or climb at a rate of 30 feet horizontally to 1 foot vertically, or, in the case of an approach to be used for instrument landings, descend at a rate of 40 to 1. This means that in the case of most airports, there must be no structure, tree, or other object anywhere within two miles of the airport, in line with one of its runways, which is higher above the elevation of the airport than 1/30 or 1/40 its distance from the end of the runway. As an example, a 50-foot structure constructed on land having the same elevation as the airport, would be an obstruction if located within 1,500 feet of the end of a runway, reducing the effective length of the runway by the number of feet it was

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within such 1,500-foot limit. Thus, if located 500 feet from the end of the runway, such a structure would make 1,000 feet unusable for landings and takeoffs over it, thereby reducing the effective length of the runway by a third.

"It will thus be seen that many of the landowners near an airport may have it in their power to seriously injure its owner merely by making a normal and reasonable use of their property, and that the failure to take steps to properly protect airport approaches can mean that future erection of structures near an airport could greatly reduce its usefulness or in some instances entirely prevent its use. Of even greater concern, however, is the danger to pilots, aircraft passengers, and the occupants of land in the vicinity of airports. Airport accident statistics show that a large percentage of crashes are caused by obstructed approaches. . . .

### Property Acquisition or Aviation Easements

"In addition, it is worthy of note that neither the Civil Aeronautics Administration nor any of the other advocates of airport zoning consider such zoning a complete answer to the problem. Rather, those organizations recognize that an airport zoning regulation, like any other exercise of the state police power, must be reasonable in its effect upon private property rights.

"If an airport zoning ordinance were to prescribe too low a height limit or attempt to compel the removal or lowering of an existing obstruction or otherwise interfere with a non-conforming structure or use, it undoubtedly would be held to be an unconstitutional taking of private property without just compensation. And since CAA standards call for unobstructed airspace above a 30 to 40 to 1 flight path beginning at the end of the runway at ground level, it seems clear that a height limit as low as that necessary could not legally be imposed by the zoning method for some distance from the end of the runway, this distance depending upon many factors such as the use made of property in the neighborhood. It is therefore recognized by the proponents of the model airport zoning act that the airport zoning method must be used in conjunction with, and supplemented by, the acquisition of property or aviation easements, in order to achieve complete protection for an airport's approaches.

It has often been asserted that, since zoning to be valid must pay due regard to all the uses of the area regulated, airport zoning must be part of a comprehensive zone plan.

Mr. Hunter recognizes the advantages of such zoning and advocates it, wherever possible. He points out, for instance, that if the airport area were used and zoned for residences of the story and a half type, it would be reasonable to impose low height limits which would be an advantage to aviation; and still lower limits if the area were agricultural.

But, as Mr. Hunter truly says, the community with an airport does not always have a comprehensive zone plan; nor is its port always within or wholly within its own boundaries; but nevertheless the public must be protected from aviation accidents by proper regulations; and these regulations would be legal under the police power; for:

"Airport zoning is not only for the community benefit and general welfare, but for the public health and safety—an entirely different and distinct 'head of the police power' and may be justified under this 'head' alone. In other words, airport zoning has two principal purposes; the one to protect the airport, and the other to protect the lives and property of the flying public and residents in the neighborhood of the airport. Both are for the benefit of the community and are therefore fit and proper objectives of city or county planning and zoning. But the latter is also for the public health and safety and, in my opinion, is itself sufficient justification for airport zoning regulations."

In brief comment on the above statement it may be said: Certainly necessary regulations of airports are valid exercises of the police power, regardless of whether or not they are part of a comprehensive zone plan; but it still remains true that the same careful regard must be given to the non-airport uses in the area or the regulation will be unreasonable and void; so the practical solution of the problem remains difficult.

# Zoning of Unincorporated Areas

SINCE CALIFORNIA, in 1927, passed its original enabling act authorizing the zoning of unincorporated areas, the following fifteen other states have done likewise. These are Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Maryland, Michigan, Missouri, New Jersey, Pennsylvania, Utah, Virginia, and Washington.

A study of eleven of these zoning enabling acts, just completed by the Hamilton County (Ohio) Regional Planning Commission, of which William W. Kelly, Sr., is executive director, shows considerable variation in the powers conferred. For example:

### Area and Authority

The laws of Colorado, Illinois, Michigan, New Jersey, Tennessee, and Wisconsin particularly provide authority to zone the unincorporated territory in any county wishing to zone, while in Georgia, Kansas, Indiana, and Missouri the authorities are permitted to enforce zoning only in counties with a population varying in some instances from 30,000 to 400,000 people per county; and the California and Indiana laws state that the unincorporated area to be covered by zoning shall be as recommended by a county planning commission.

In the laws of Colorado, Georgia, Illinois, and Indiana the authority for the establishment of planning commissions and zoning boards to prepare plans and set up regulations for adoption is vested entirely in the county commissioners of any county to be zoned. Michigan has two zoning enabling acts, or laws, one known as county rural zoning and the other as township rural zoning. The first gives the establishing authority to the county commissioners, while in the latter case it is given to the township trustees. Kansas has county and township planning and zoning, both of which are within the establishing authority of the county commissioners. The California and Wisconsin laws place such authority in the hands of a county legislative body, or a county board, while in Missouri and Tennessee it rests with the county courts. In New Jersey the authority is vested in township governing boards.

### Preparation of Zoning Plans and Regulations

In most states the acts specify the appointment of either a county, regional, or township planning or zoning commission as the office responsible for the preparation of the zoning plan and the setting up of the necessary regulations to enable its enforcement. The Colorado zoning law states that, before a zoning plan prepared by a county or a district planning commission is offered, upon petition of fifty property owners of a proposed district, for adoption by the county commissioners of any county, it must be submitted to the State Planning Commission for advice. The county rural zoning law of Michigan states that, after the county commissioners of any county have held a hearing on a proposed zoning plan, prepared by a county zoning commission, for the purpose of passing an ordinance to permit adoption, it must be submitted to the State Planning Commission for approval. A referendum is required on petition.

The zoning laws for the different states vary with respect to exemptions. In several states the use of land for agricultural and public utility purposes is exempt under certain conditions from zoning restrictions.

A chart tabulating these and other variations in the eleven states studied is available on application to the Hamilton County Regional Planning Commission, 409 Court House, Cincinnati 2, Ohio.

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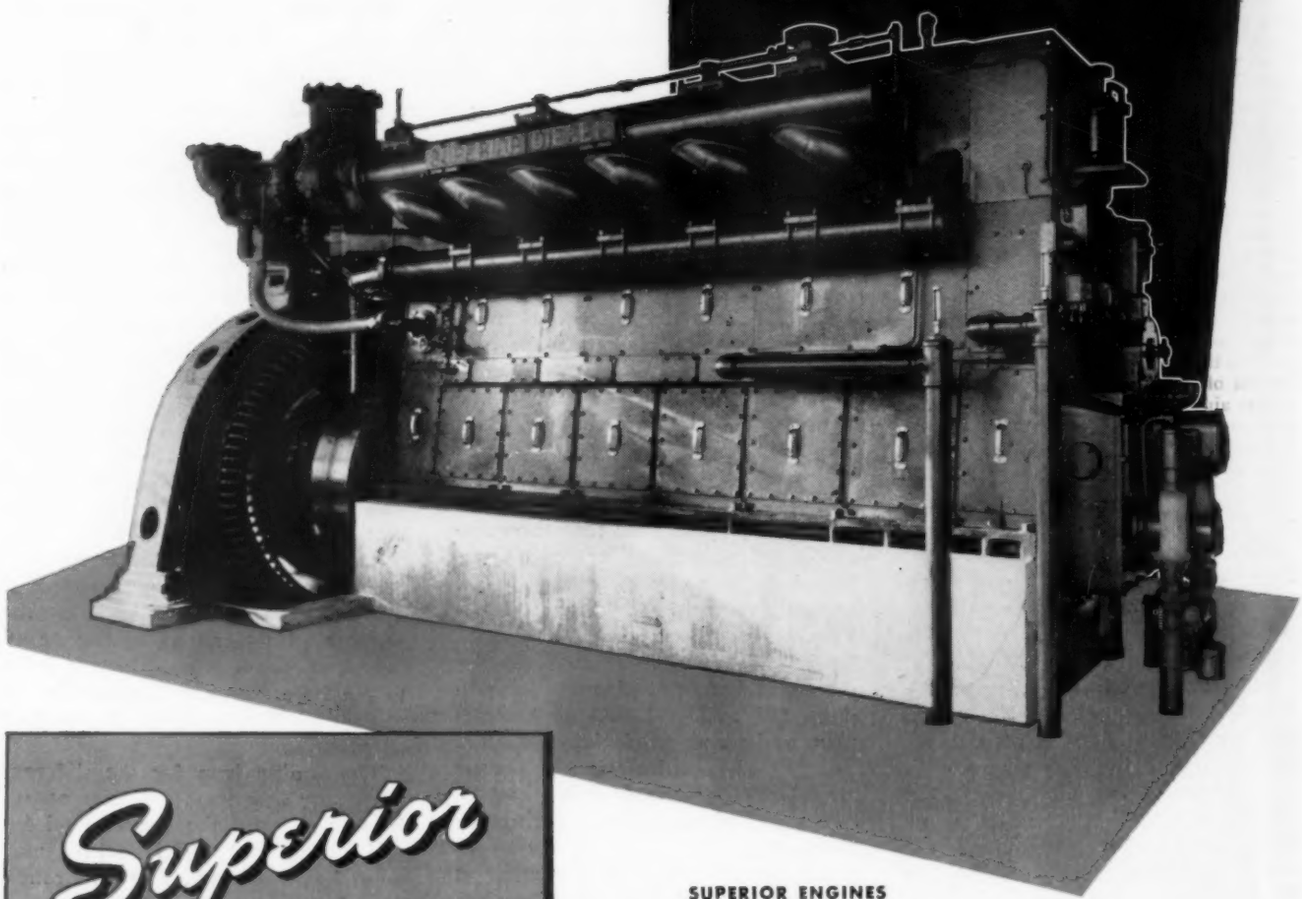

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# Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, Executive Director

### Automobile Show Rooms—Arbitrary Denial of Construction Permit

Where borough building inspector, zoning board of adjustment, mayor and council refused to issue permits for construction of building and operation of automobile showroom and service station therein at street corner in business zone on high speed highway, where 18,000 automobiles passed daily, and near large bar and grill, another automobile showroom, two gasoline service stations, a used-car lot and other business establishments, held that such refusals were improper as arbitrary, unreasonable and denial of due process of Law. *Phillips* v. *Borough of East Paterson*, 46 Atl. (2d) 667 (N. J. Sup. Ct., Apr. 24, 1946).

### Charitable Institutions—Hotels for Merchant Marine—Exemption from Taxation

In mandamus to cancel ad valorem tax assessments on hotel and furniture and equipment allegedly devoted exclusively to charitable undertakings, held that since hotel and furniture and equipment was operated as a war measure to promote welfare of members of merchant marine such operations were devoted exclusively to "charitable undertakings" within constitutional proviison exempting from taxation property so devoted. *State* v. *City of New Orleans*, 25 So. (2d) 596 (La., Mar. 18, 1946).

### City Employes—Reclassification—Discrimination with Employes in Private Industry

In action to compel reclassification of petitioners and to pay their demands for additional wages, held that an employe of city was not entitled to reclassification as a "dump truck driver" instead of a "refuse collector," that an employe was not entitled to reclassification as a "journeyman machinist and welder" instead of merely a "machinist mechanic" as previously classified, and that an employe was not entitled to be reclassified as an "engineer" instead of an "equipment operator" on ground of discrimination with employes in private industry. *Goodrich* v. *City of Fresno; Jefford* v. *Same; Pretzer v. Same*, 167 Pac. (2d) 784 (Cal. App., Apr. 15, 1946).

### Firemen—Pensions—Overexertion, Strain, Heat as Within Line of Duty

In action by fireman to recover pension, held that permanent and total disability in line of duty within Firemen's Pension Act need not result from accident or violent injury, but includes disability from any cause which fireman may suffer in line of duty, including sickness or disease, contracted in line of duty and the results of overexertion, strain, inhalation of smoke, and extreme heat brought about in line of duty. *Evans* v. *City of Lincoln*, 22 N.W. (2d) 565 (Neb., Apr. 19, 1946).

### Firemen—Use of Name or Photographs in Advertisements—Forbidden

In action for injunction preventing defendant from enforcing New York City fire department rules and regulations, held that a regulation preventing members of fire department from sanctioning use of their names or photographs in connection with any written or printed article or with a newspaper or magazine advertisement unless written approval of the chief of department is secured, was reasonable exercise by fire commissioner of right to prescribe rules and regulations affecting discipline of uniformed members of department. *Kane* v. *Walsh*, 66 N.E. (2d) 53 (N. Y., Mar. 7, 1946).

### Gasoline Stations—Permits—Mandamus to Compel Issuance

Where court was asked by certiorari and mandamus to compel issuance of permit for gasoline station after having theretofore twice refused to do so, and present factual situation, except for lease to present prosecutor, differed in no material respect from that of previous cases, held that relief would be denied. *Finn* v. *Municipal Council of City of Clifton*, 46 Atl. (2d) 443 (N. J. Sup. Ct., Apr. 1, 1946).

### Liquor Licenses—Country Club Included in Number Permitted

In action to enjoin sale of intoxicating liquor at retail under license alleged to be void, held that "Class B" retail liquor licenses issued to private clubs must be computed in determining the total number of licenses that may be issued under statute limiting the number of retail "Class B" intoxicating liquor licenses that may be issued by governing bodies of any town, village or city. *State ex rel. Martin* v. *Barrett*, 22 N.W. (2d) 663 (Wis., Apr. 29, 1946).

### Nuisances—Police Rifle Range—Liability of City for Accident on

Where 14-year-old boy was injured by playmate through discharge of firearm being used on police target range in target practice by playmate, held that no cause of action arose against village maintaining the range on public ground, in absence of evidence showing that village through its duly authorized agents directly controlled, supervised, or directed such use of the range at the time the boy received his injury. *Gaines* v. *Village of Wyoming*, 66 N. E. (2d) 162 (Ohio App., Feb. 4, 1946).

### Pensions—Effective Date of Award

In petition to review determination of Board of Selectmen, held that Board having determined that death of police officer was the proximate result of undergoing a hazard peculiar to his employment and that an annuity of $1,000 per year should be paid to his widow, was not required, under statute, to direct that such payment be made from date of death, but could direct that payment be made from date of order. *Tolman* v. *Selectmen of Brookline*, 66 N. E. (2d) 39 (Mass., Mar. 29, 1946).

### Restaurants—Issuance of Permit Prior to Zoning Ordinance Adoption

Where applicant for permit for construction of building to be used as restaurant had fully complied with Building Code and had completely established right to permit before adoption of zoning ordinance, held that his right to permit could not be denied, building commissioner had duty to issue permit and writ of mandamus would be awarded. *Sgromolo* v. *City of Asbury Park*, 46 Atl. (2d) 661 (N. J. Sup. Ct., Apr. 22, 1946).

### Schemes of Chance—Prosecution for Possession of Slips

In conviction for possessing slips intended to be used in scheme of chance in violation of ordinance of city, held that where there was nothing upon which to predicate finding that slips in defendant's possession were intended to be used in such scheme of chance, evidence was insufficient to support conviction. *City of Columbus* v. *Lewis*, 65 N. E. (2d) 915 (Ohio App., Feb. 19, 1946).

### Sewage Treatment—Contract Between Borough and City—Termination of

In action to enjoin suit pending to recover $35 per million gallons of sewage chemically treated and disposed of under agreement between borough and city, held that a judgment that agreement between city and borough requiring city to dispose of borough's sewage was not against public policy because it imposed perpetual obligation on city, so as to authorize cancellation of agreement, was res judicata of city's right to terminate the agreement, and precluded action to recover for chemical treatment of borough's sewage. *Borough of Milltown* v. *City of New Brunswick*, 46 Atl. (2d) 562 (N. J. Ct. of Chan., Apr. 1, 1946).

### Sidewalks—Photographs of Defects Causing Injury—Insufficiency of Evidence

In action against city for injuries sustained in fall on public sidewalk, where pedestrian testified that her heel caught in crack in sidewalk and that afterwards she looked back and saw cracks in sidewalk, but there was no evidence as to nature of cracks other than photographs, and photographs did not warrant an inference that any of cracks constituted an actionable defect, held that evidence was insufficient for jury. *Berry* v. *City of Boston*, 65 N. E. (2d) 920 (Mass., Feb. 7, 1946).

### Surety Bonds—Deposits of Public Funds—Recovery by City

In action to recover from surety on bond given to assure repayment of deposits of public funds by depository bank, where it appeared that more than six years prior to the commencement of action the bank closed, a receiver was appointed and no payments upon deposit liability by either receiver or surety were made within the six-year period, held that the cause of action was barred by limitations. *Lakeville Township* v. *Northwestern Trust Co.*, 22 N. W. (2d) 591 (N. D., Apr. 11, 1946).

### Taxicabs—Liability Insurance Provisions—Extraterritorial Effect of Ordinance

Where city ordinance required taxicab companies to file liability insurance policy for licensing or operation on streets of city and contemplated operation of taxicabs, licensed thereunder, from points within city to points without, held that such ordinance is not invalid as giving extraterritorial effect to the ordinance. *Croft* v. *Hall*, 37 S. E. (2d) 537 (S. C., Mar. 19, 1946).

### Trailer Camps—Building Code Violation—30 Day Test Period for Determining Use

Where township building code ordinance fixed 30 days as test period to determine whether house trailer was in legal temporary and transient use or settled and fixed and therefore illegal as not conforming to requirements of a dwelling house, held that such ordinance was not invalid as attempting to regulate or prohibit trailer camps and was not unreasonable, nor was it invalid because of existing housing shortage. *Lower Merion Township* v. *Gallup*, 46 Atl. (2d) 35 (Pa. Mar. 5, 1946).

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# Conventions—When and Where

** Conventions listed this month for the first time are indicated by an asterisk (*)*

July 22-24—**Pittsburgh, Pa.**
PENNSYLVANIA CHIEFS OF POLICE ASSOCIATION. Annual meeting (Hotel William Penn). Sec., F. B. Titus, Lansdowne, Pa.

July 23-25—**Utica, N. Y.**
NEW YORK STATE ASSOCIATION OF CHIEFS OF POLICE. Annual Meeting (Hotel Utica). Sec.-Treas., R. W. Morris, Box 203—Capitol Station, Albany, N. Y.

July 23-26—**Cleveland, Ohio**
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Hotel Statler). Sec., Daniel B. Tierney, 8 Robbins Rd., Arlington, Mass.

July 24-26—**Indianapolis, Ind.**
INDIANA MUNICIPAL LEAGUE. Annual Convention (Hotel Claypool). Exec. Sec., W. Vincent Youkey, 401 City Hall, Indianapolis.

Aug. 5-7—**Seattle, Wash.**
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting and Convention. (Hotel New Washington) Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago, Ill.

Aug. 13-15—**Cedar Point, Ohio**
AMERICAN SHORE AND BEACH PRESERVATION ASSN. Summer Meeting (The Breakers). Sec.-Treas., Peter J. Cannon, 1060 Broad St., Newark, N. J.

Aug. 19-21—**Chicago, Ill.**
NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING, INC. Annual Conference and Products Exhibit (Hotel Stevens). Exec. Dir., Albert H. Hall, 730 Jackson Pl., NW, Washington, D. C.

Aug. 21-22—**Missoula, Mont.**
MONTANA MUNICIPAL LEAGUE. Annual Convention (Hotel Florence). Sec., M. J. Mee, 518 Birch St., Anaconda, Mont.

Aug. 26-28—**State College, Pa.**
PENNSYLVANIA WATER WORKS OPERATORS ASSOCIATION. Annual Meeting (Pennsylvania State College Bldgs.). Sec., I. M. Glace, 22 South 22nd St., Harrisburg, Pa.

Aug. 27-30—**Boston, Mass.**
NATIONAL SHADE TREE CONFERENCE. Annual Meeting (Hotel Statler). Sec.-Treas., L. C. Chadwick, Ohio State University, Columbus, Ohio.

Aug. 28-30—**State College, Pa.**
PENNSYLVANIA SEWAGE WORKS ASSOCIATION. Annual Meeting (Pennsylvania State College Bldgs.). Sec., Bernard S. Bush, c/o Department of Public Health, Kirby Health Center, Wilkes-Barre, Pa.

Aug. 29-31—**Cedar City, Utah**
MUNICIPAL LEAGUE OF UTAH. Annual Meeting (Hotel Escalante). Exec. Sec., Mrs. Lyla Ray, 318 McIntyre Bldg., Salt Lake City.

Sept. 2-5—**Memphis, Tenn.**
BUILDING OFFICIALS' CONFERENCE OF AMERICA. Annual Convention. Sec-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

Sept. 9-11—**Savannah, Ga.**
AMERICAN WATER WORKS ASSOCIATION—SOUTHEASTERN SECTION. Annual Meeting (Hotel De Sota). Sec., B. P. Rice, Reconstruction Finance Corp.—Bond Service Div., Healey Bldg., Atlanta, Ga.

*Sept. 10-13—**Magnolia, Mass.**
GOVERMENTAL RESEARCH ASSOCIATION. Annual Conference (Oceanside Hotel). Sec., G. Gordon Tegnell, 30 Rockefeller Plaza, New York 20, N. Y.

Sept. 12-13—**Pittsburgh, Pa.**
AMERICAN WATER WORKS ASSOCIATION—WESTERN PENNSYLVANIA SECTION. Annual Meeting (Hotel Roosevelt). Sec., E. P. Johnson, 418 Flannery Bldg., Section 13, Pittsburgh, Pa.

Sept. 12-14—**Asheville, N. C.**
NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Conference (Hotel George Vanderbilt). Exec. Sec., Mrs. Davetta L. Steed, North Carolina League of Municipalities, 704 Raleigh Bldg., Raleigh, N. C.

Sept. 16-18—**Chicago, Ill.**
AMERICAN TRANSIT ASSOCIATION. Annual Meeting (Palmer House). Gen. Sec., Guy C. Hecker, American Transit Association, 292 Madison Ave., New York, N. Y.

*Sept. 16-18—**Wichita, Kans.**
LEAGUE OF KANSAS MUNICIPALITIES. Annual Convention (Broadview Hotel). Exec. Dir., John G. Stutz, Capitol Federal Bldg., Topeka.

*Sept. 16-18—**Atlanta, Ga.**
GEORGIA WATER AND SEWAGE ASSOCIATION. Annual Water and Sewage School (Georgia School of Technology). Sec., V. P. Enloe, RFD 5, Box 363, Atlanta, Ga.

*Sept. 16-19—**San Diego, Calif.**
LEAGUE OF CALIFORNIA CITIES. Annual Conference (Hotel U. S. Grant). Exec. Sec., Richard Graves, Hotel Senator, Sacramento.

Sept. 16-20—**Poland Spring, Me.**
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Convention (Poland Spring House). Sec., Walter Conroy, 613 Statler Bldg., Boston, Mass.

Sept. 18-20—**Traverse City, Mich.**
AMERICAN WATER WORKS ASSOCIATION—MICHIGAN SECTION. Annual Meeting (Hotel Park Place). Sec.-Treas., Raymond J. Faust, Division of Water Supply, Bureau of Engineering, State Department of Health, Lansing, Mich.

Sept. 18-21—**Quebec, Canada**
ILLUMINATING ENGINEERING SOCIETY. Annual Convention (Hotel Frontenac). Exec. Sec., A. D. Hinckley, 51 Madison Ave., New York.

Sept. 19—**Dickinson, N. D.**
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention. Exec. Sec., Myron H. Atkinson, City Auditor, Bismarck, N. D.

Sept. 20-21—**Deadwood, S. D.**
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Meeting. Dir., W. W. Towne, Division of Sanitary Engineering, State Board of Health, Pierre, S. D.

Sept. 22-24—**Virginia Beach, Va.**
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Meeting (Hotel Cavalier). Sec., Harold I. Baumes, 902 Travelers Bldgs., Richmond, Va.

Sept. 22-25—**Fort Worth, Texas**
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress (Hotel Texas). Exec. Dir., Norman Hebden, 1313 E. 60th St., Chicago, Ill.

*Sept. 23-27—**Mexico City, Mexico**
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Palace of Fine Arts). Exec. Sec., Edward J. Kelly, 918 F St., NW, Washington, D. C.

Sept. 24-27—**Boston, Mass.**
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. National Conference on Assessment Administration (Hotel Statler). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago.

*Sept. 25-27—**Elmira, N. Y.**
MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF NEW YORK STATE. Annual Conference (Mark Twain Hotel). Sec., T. J. McKee, 200-212 East Third St., Jamestown, N. Y.

*Sept. 26-27—**Mandan, N. D.**
NORTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Convention (Hotel Lewis & Clark). Sec.-Treas., K. C. Lauster, c/o State Department of Health, Bismarck, N. D.

Sept. 26-28—**Harrisburg, Pa.**
PENNSYLVANIA LEAGUE OF THIRD CLASS CITIES. Annual Convention (Penn Harris Hotel). Pres., Walter Greenwood, 320 Municipal Bldg., Harrisburg, Pa.

*Sept. 27-28—**Lancaster, Pa.**
AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Annual Meeting (Hotel Brunswick). Sec.-Treas., H. Lloyd Nelson, 1624 Lincoln-Liberty Bldg., Philadelphia.

Sept. 30-Oct. 2—**Springfield, Ill.**
ILLINOIS MUNICIPAL LEAGUE. Annual Convention (Hotel Leland). Exec. Sec., A. L. Sargent, Illinois Municipal League, 537 So. 4th St., Springfield, Ill.

*Oct. 2-3—**Mammoth Cave, Ky.**
KENTUCKY MUNICIPAL LEAGUE. Annual Convention (Mammoth Cave Hotel). Exec. Sec., Carl B. Wachs, c/o Univ. of Kentucky, Lexington, Ky.

Oct. 2-3—**Milwaukee, Wis.**
WISCONSIN CHIEFS OF POLICE ASSOCIATION. Annual Conference (Hotel Schroeder). Sec., Walter H. Wagner, Sheboygan, Wis.

*Oct. 3-4—**Albany, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Fall Meeting (Hotel DeWitt Clinton). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

Oct. 3-5—**Columbus, Ohio**
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Hotel Deshler-Wallick). Sec.-Treas., Wilbur S. Smith, Stratcona Hall, New Haven.

Oct. 7-9—**Toronto, Ontario**
CANADIAN INSTITUTE OF SEWAGE AND SANITATION. Annual Meeting (Hotel Royal York). Sec.-Treas., Dr. A. E. Berry, Canadian Institute of Sewage and Sanitation, Parliament Bldg., Toronto, Ont.

Oct. 7-9—**Toronto, Ont.**
FEDERATION OF SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Royal York). Sec., W. H. WISELY, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 10-12—**Columbus, Ohio**
AMERICAN WATER WORKS ASSOCIATION—OHIO SECTION. Annual Conference (Hotel Fort Hayes). Sec.-Treas., F. P. Fischer, Wallace & Tiernan, 811 Perry Payne Bldg., Cleveland.

Oct. 7-11—**Chicago, Ill.**
NATIONAL SAFETY COUNCIL. Congress and Exposition (Hotel Stevens). Pres., Ned H. Dearborn, 20 North Wacker Drive, Chicago.

Oct. 7-12—**Hastings, Sussex, England**
INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. International Congress and Exhibition. Congress Officer, 13 Suffolk St., London, S.W.I.

*Oct. 10-12—**Cleveland, Ohio**
NATIONAL ASSOCIATION OF HOUSING OFFICIALS. Annual Meeting (Hotel Carter). National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill.

Oct. 14-17—**Galveston, Texas**
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Annual Meeting (Robinson Memorial Auditorium). Sec., L. A. Jackson, Mgr., Water Works, Little Rock, Ark.

Oct. 16-18—**Omaha, Nebr.**
LEAGUE OF NEBRASKA MUNICIPALITIES. Annual Convention (Hotel Paxton). Sec.-Treas., C. E. Beals, 310 Continental Bank Bldg., Lincoln, Nebr.

Oct. 16-18—**Atlantic City, N. J.**
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Convention (Hotel Traymore). Sec.-Treas., E. R. Hannum, 510 Telegraph Bldg., Harrisburg, Pa.

*Oct. 17-18—**Fond du Lac, Wis.**
LEAGUE OF WISCONSIN MUNICIPALITIES. Annual Convention (Hotel Retlaw). Sec., Frederick MacMillin, Madison, Wis.

*Oct. 17-18—**Morgantown, West Va.**
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. Annual Convention (Hotel Morgan). Sec., J. H. Harrington, State Department of Health, Charleston, W. Va.

*Oct. 17-19—**Rockford, Ill.**
ILLINOIS ASSOCIATION OF PARK DISTRICTS. Annual Convention (Hotel Faust). Exec. Dir., Miss Marjorie Dickinson, 205 E. Adams St., Springfield, Ill.

*(Concluded on page 137)*

# IT'S TABOO

## In the Parks

One man with a Royer prepares more and better compost than a sizable gang with time-consuming hand methods. Just shovel material into the hopper —the Royer does the mixing, shredding, eliminating of trash and reduces the compost to a size ideal for top dressing. Parks with Royers maintain healthy grass despite manpower shortage.

*Send for this book*

## ★ TO WASTE FOOD
## ★ TO WASTE SEWAGE SLUDGE

When you incinerate or bury your sewage sludge you are wasting a valuable product that is urgently needed to increase America's food production — with more mouths to feed than ever before.

The fertilizing values in sewage sludge are not in applicable form as it comes from the drying beds. At a cost no greater than that of burial, modern sewage plants are converting sludge cake into fertilizer with Royer Sludge Disintegrators, and enjoying a steady revenue therefrom.

The Royer, operated by one man, disintegrates, shreds, aerates and further dries the sludge, and automatically eliminates refuse. It discharges an effective, ready-to-use fertilizer which has proved to be a rich, nutritious plant food in all parts of the country.

Available in twelve stationary and portable models: electric motor, gasoline engine and belt-to-tractor driven. Send for the "Sewage Sludge Utilization Catalog"—tells how park boards and sewage commissions can work together.

ROYER

PIONEERS IN THE SALVAGE OF SEWAGE SLUDGE

**ROYER FOUNDRY & MACHINE CO.**

179 PRINGLE ST., KINGSTON, PA.

## How the War Memorial Idea Has Evolved

(Continued from page 82)

the foot of Broadway in New York City in 1770. This statue later furnished 42,588 musket balls for the Continental Army. In 1853 the first American equestrian statue, Andrew Jackson on a capering bronze stallion, was set up opposite the White House.

In those days the leader in war personified the spirit of a country. Today we recognize that bravery and sacrifice are not matters of rank, and that it is the spirit of the fighting forces and of the people behind them that win wars and should be commemorated in our war memorials.

Though we smile at old fashions in memorials, we should not forget some of our own World War I examples. Could there be a less impressive memorial than a disabled cannon or a rusty tank? And as for 1920 styles in bronze doughboys—why go on?

One idea did come out of these years—that a good memorial may be not only beautiful and permanent, but also useful. Memorial civic centers, memorial stadiums and memorial highways, bridges and waysides are examples of this idea.

From "Highway War Memorials," by George B. Gordon, published by Highway Research Board, Washington, D. C.

## Conventions—When and Where

(Continued from page 135)

**Oct. 23-25—San Francisco, Calif.**
AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. Annual Conference (Hotel Whitcomb). Sec., Ray L. Derby, Box 3669—Terminal Annex, Los Angeles, Calif.

***Oct. 27-30—Miami, Fla.**
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. Annual Meeting (Hotels McAllister, Columbus, Colonial, Everglades, and Alcazar). Exec. Sec.-Treas., Miss Elizabeth Glenn, 1616 H St., NW, Washington ton, D. C.

**Oct. 28-30—Pittsburgh, Pa.**
ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA. Annual Water Conference (Hotel William Penn). Conference Chairman H. M. Olson, Hotel William Penn, Pittsburgh, Pa.

***Nov. 7-8—Augusta, Me.**
MAINE MUNICIPAL ASSOCIATION. Annual Convention. Sec., Mrs. Ethel Kelley, 97 Maine St., Hallowell, Me.

**Nov. 7-9—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION—NEW JERSEY SECTION. Annual Meeting (Hotel Chelsea). Sec., C. B. Tygert, Box 178, Newark.

**Nov. 7-9—Omaha, Nebr.**
AMERICAN WATER WORKS ASSOCIATION—MISSOURI VALLEY SECTION. Sec.-Treas., M. P. Hatcher, Dir., Water Department, City Hall, Kansas City, Mo.

**Nov. 11-13—Raleigh, N. C.**
AMERICAN WATER WORKS ASSOCIATION—NORTH CAROLINA SECTION. Annual Convention (Hotel Sir Walter Raleigh). Sec.-Treas., George S. Moore, American Water Works Association—North Carolina Section. Box 125, Albemarle, N. C.

**Nov. 11-13—Raleigh, N. C.**
NORTH CAROLINA SEWAGE WORKS ASSOCIATION. Joint Meeting with the foregoing.

**Nov. 11-13—Philadelphia, Pa.**
NATIONAL MUNICIPAL LEAGUE. National Conference on Government (Hotel Bellevue-Stratford). Exec. Dir., Alfred Willoughby, National Municipal League, 299 Broadway, New York, N. Y.

***Nov. 11-13—Philadelphia, Pa.**
NATIONAL ASSOCIATION OF CIVIC SECRETARIES. Annual Meeting to coincide with National Municipal League Conference on Government (Hotel Bellevue-Stratford). Sec., Miss H. Marie Dermitt, 5724 Darlington Rd., Pittsburgh, Pa.

**Nov. 11-14—Miami, Fla.**
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Convention. Sec., Irvin Shulsinger, International Municipal Signal Association, Inc., 8 East 41st St., New York, N. Y.

**Nov. 11-15—Cleveland, Ohio**
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting (Public Auditorium). Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York, N. Y.

***Nov. 14-15—Richmond, Va.**
AMERICAN WATER WORKS ASSOCIATION—VIRGINIA SECTION. Annual Convention (John Marshall Hotel). Sec., W. H. Shewbridge, State Dept. of Health, Richmond 22, Va.

**Nov. 17-20—St. Louis, Mo.**
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Meting (Hotel Jefferson). Exec. Sec., Dave Hovey, P. O. Box 422, Rockford, Ill.

**Nov. 17-20—Chicago, Ill.**
AMERICAN MUNICIPAL ASSOCIATION. Annual Conference (Hotel Congress). Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

## *ARBA Offers Airport Information*

THE AMERICAN Road Builders' Association through its Airport Division has been furnishing a service to its members which is particularly valuable since the National Airport Act has been passed. W. R. Macatee, manager of the Airport Division has pointed out recently that this same service may be obtained by other municipal officials who now find themselves confronted with airport problems simply by affiliating themselves with the American Road Builders' Association located at the International Building, Washington 4, D. C.

The Airport Division keeps members informed from time to time on national developments and regulations concerning federal aid for airports and the effect of such regulations upon the municipality that the members serve. Persons other than local officials are eligible for membership in the division.

### Apportionment of Federal Aid, under the Federal Airport Act*

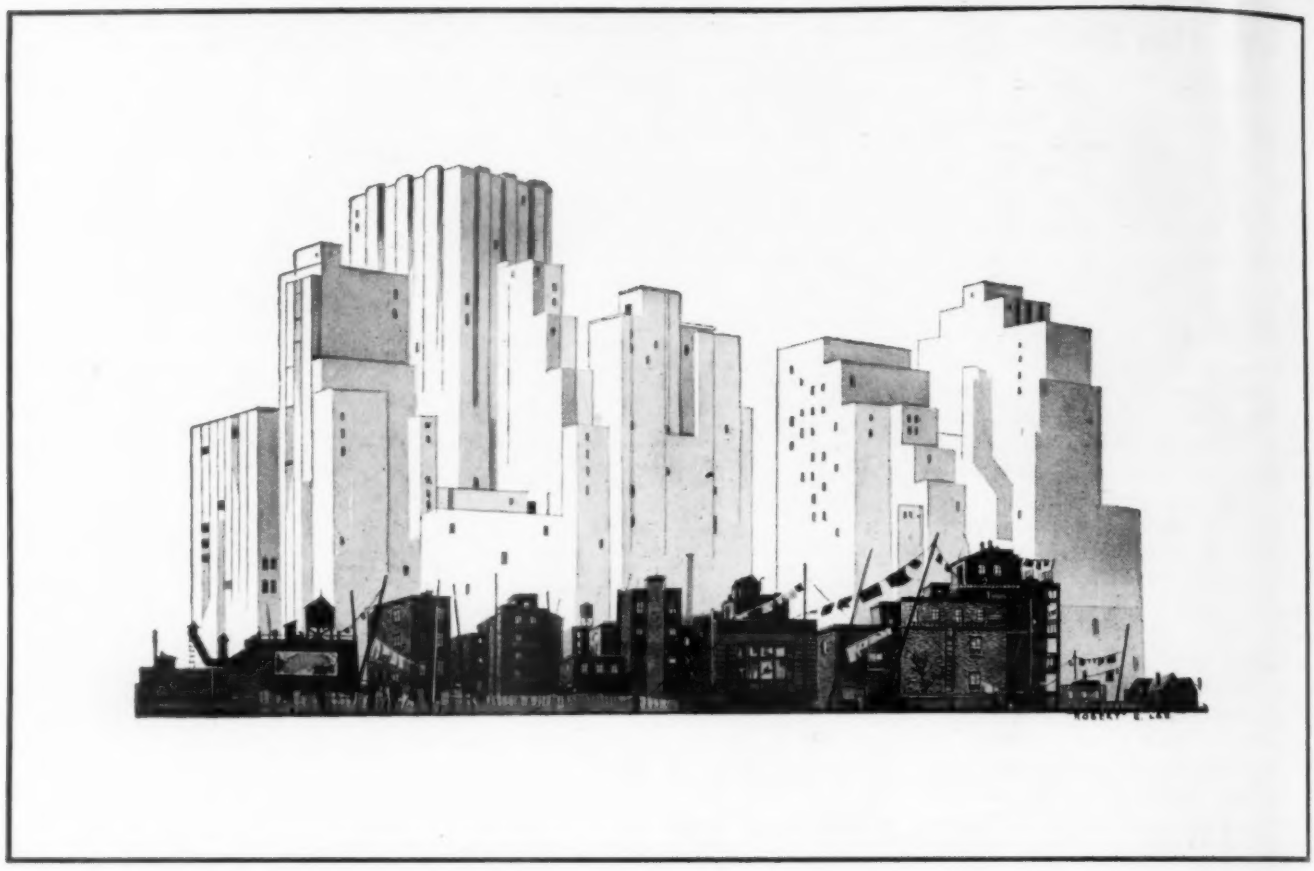
| State | Total State Apportionments | Net State Percentage of Authorised Funds |
|---|---|---|
| Alabama | $ 6,874,077 | 1.929565 Per Cent |
| Arizona | 7,388,661 | 2.074010 " " |
| Arkansas | 5,786,751 | 1.618737 " " |
| California | 18,697,066 | 5.248299 " " |
| Colorado | 7,663,436 | 2.151140 " " |
| Connecticut | 2,607,506 | .731932 " " |
| Delaware | 481,764 | .135232 " " |
| District of Columbia | 901,112 | .252944 " " |
| Florida | 6,018,106 | 1.689293 " " |
| Georgia | 7,695,709 | 2.160199 " " |
| Idaho | 5,634,509 | 1.581617 " " |
| Illinois | 14,007,502 | 3.931930 " " |
| Indiana | 6,776,014 | 9.902039 " " |
| Iowa | 6,750,695 | 1.894932 " " |
| Kansas | 7,285,422 | 2.045031 " " |
| Kentucky | 6,230,312 | 1.748859 " " |
| Louisiana | 6,057,620 | 1.700385 " " |
| Maine | 3,103,678 | .871208 " " |
| Maryland | 3,087,175 | .866575 " " |
| Massachusetts | 6,326,381 | 1.775826 " " |
| Michigan | 10,541,544 | 2.959030 " " |
| Minnesota | 8,732,048 | 2.451101 " " |
| Mississippi | 5,766,437 | 1.618649 " " |
| Missouri | 9,226,226 | 2.589818 " " |
| Montana | 9,428,452 | 2.646583 " " |
| Nebraska | 6,332,068 | 1.777423 " " |
| Nevada | 6,663,841 | 1.870552 " " |
| New Hampshire | 1,213,277 | .340569 " " |
| New Jersey | 6,089,775 | 1.709411 " " |
| New Mexico | 7,889,865 | 2.214699 " " |
| New York | 21,156,642 | 5.938707 " " |
| North Carolina | 7,938,360 | 2.228312 " " |
| North Dakota | 5,033,080 | 1.412794 " " |
| Ohio | 11,774,192 | 3.305036 " " |
| Oklahoma | 7,281,468 | 2.043921 " " |
| Oregon | 7,189,743 | 2.018173 " " |
| Pennsylvania | 16,064,883 | 4.509441 " " |
| Rhode Island | 1,036,577 | .290969 " " |
| South Carolina | 4,400,329 | 1.235180 " " |
| South Dakota | 5,410,591 | 1.518762 " " |
| Tennessee | 6,434,388 | 1.806144 " " |
| Texas | 24,433,789 | 6.858607 " " |
| Utah | 5,749,013 | 1.613758 " " |
| Vermont | 1,052,284 | .295378 " " |
| Virginia | 6,027,989 | 1.692067 " " |
| Washington | 6,367,666 | 1.787415 " " |
| West Virginia | 3,998,144 | 1.122286 " " |
| Wisconsin | 7,354,042 | 2.120433 " " |
| Wyoming | 6,109,791 | 1.715029 " " |
| | $356,250,000 | 100.000000 Per Cent |

* Information furnished by the Airport Division of the American Road Builders Association.

# The Municipal Bond Market

Some sales of new issues as reported in recent issues of *The Bond Buyer*:

| Amount | Borrower and Purpose | Rate (%) | Term (Years) | Basis (%) |
|---|---|---|---|---|
| $100,000 | Meriden, Conn., Street Improvement | .75 | 1-10 Ser. | .742 |
| 175,000 | Kern Co., Cal., Wasco Union School Dist. | .85 | 1-5 Ser. | .846 |
| 498,000 | Monmouth Co., N. J., General Improvement | 1.0 | 6.25 Avg. | .99 |
| 123,000 | Weston, Mass., Water Loan No. 13 | 1.0 | 7.33 Avg. | .83 |
| 500,000 | Martin Co., Minn., Ind. School Dist. No. 1 | 1.10 | 8.75 Avg. | 1.01 |
| 2,900,000 | Buffalo and Fort Erie Bridge Authority, Bridge Refunding Revenue | 1.10 | 15.66 | 1.197 |
| 29,100,000 | Philadelphia, Pa., City | 1.25-4.0 | 3-43 Avg. | 1.5959 |
| 515,000 | Montgomery County, Md., Silver Spring Business Dist. | 1.25 | 16.33 Avg. | 1.3631 |
| 150,000 | Lancaster and Cheektowaga, N. Y., Com. School Dist. No. 4 | 1.40 | 1-20 Ser. | 1.336 |
| 450,000 | Madison Co., Ill., Com. High School Dist. No. 144 | 1.40 | 10.50 Avg. | 1.3944 |
| 220,000 | Scranton, Pa., Funding and Municipal Improvement | 1.50 | 7.80 Avg. | 1.333 |
| 2,500,000 | Chicago, Ill., Water Works System Revenue Certificates of Indebtedness | 1.50 | 16-20 Ser. | 1.326 |
| 110,000 | Greensboro, N. C., General Improvement | 2 | 12.16 Avg. | 1.467 |
| 173,000 | Florence, Ala., Electric System Revenue | 2.25 | 14 Avg. | 1.45 |



# Where's the water going to come from?

FOR the housing development that is to rise on the slum clearance site . . . for the municipal swimming pools . . . the new industries—for the scores of demands soon to be made on the water supply of the postwar community, better water and, quite probably, *more* water is going to be needed.

The ideal water for industry and householder, of course, is soft . . . clear . . . iron-free. Permutit* equipment provides this kind of water. When space is at a premium, compact Spaulding Precipitators or Spiractors not only offer the most modern form of lime soda treatment, but cut space requirements to one half or even one *quarter* of older style water treatment plants.

Find out how Permutit can serve your community. Full particulars will be furnished gladly to you or your consultants. Write to The Permutit Company, Dept A-7, 330 West 42nd Street, New York 18, N. Y. or Permutit Co. of Canada, Ltd., Montreal.

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**PERMUTIT SPAULDING PRECIPITATOR** removes water hardness, dirt and color by the sludge blanket process. This new-design equipment cuts detention time, saves chemicals, takes only half the space of former methods. Present installations handle up to 120,000,000 gallons daily.

**PERMUTIT**

**WATER CONDITIONING HEADQUARTERS**

# Municipal and Civic Publications

## Power of Municipalities to Enter Into Labor Union Contracts

LABOR UNIONS AND MUNICIPAL EMPLOYE LAW. *By Charles S. Rhyne. National Institute of Municipal Law Officers, 730 Jackson Place, N.W., Washington, D. C.* 1946. 583 *pp.* $10.00.

In view of the current membership drive by unions affiliated with the CIO and the AFL in the government field, this volume is especially timely. It constitutes an up-to-date edition of a similar report issued by the National Institute in 1941, entitled, "Power of Municipalities to Enter Into Labor Union Contracts —A Survey of Law and Experience." City experience is covered from the Boston Police Strike in 1919 to the Houston city employes strike in 1946.

The volume analyzes every court decision on the subject, of inferior jurisdiction or otherwise, discussing successively the right of municipal employes to organize and join labor unions, instances where such right can be prohibited or limited (as in the case of police), and the power of municipalities to contract with labor unions representing municipal employes. Special attention is devoted to "exclusive bargaining" privileges, the "check-off" device, arbitration, the right of municipal employes to strike, and picketing of public property during labor disputes. There is a discussion of the exercise of governmental" as distinguished from "proprietary" functions as a basis for altering legal relations between municipally-owned utilities and labor unions of such municipal utility employes. (See page 5 of this issue.)

## Digest of Social Welfare Laws

DIGEST OF NEW YORK STATE SOCIAL WELFARE AND RELATED LAWS OF 1946.—*New York State Department of Social Welfare,* 112 *State St., Albany, N. Y. May,* 1946. 9 *pp.*

Annual digest of social welfare laws enacted at the 1946 session of the New York State Legislature. Acts dealing with child welfare, migrant labor, mental hygiene, public assistance, etc., are listed with brief resumes of content. in each case the introductory number of the bill is given as well as the name of the legislator who introduced it.

## Problems and Potentialities of Cooperative Housing

WHAT ABOUT COOPERATIVE HOUSING?—*By Merle Hendrickson. Co-op Builders,* 1314 *Michigan Building, Detroit, Mich. September* 1946. *Mimeo.* 35 *pp.*

Booklet examining the objectives, problems, and future of cooperative housing in the United States. The author feels that there are three main objectives to be considered; improvement of the quality of homes, increase in security of tenure, and establishment of man's control over his environment which would permit him to plan and build a better place to live. The booklet deals with problems of building, managing, and living in a cooperative community.

## Source Book of Texas Planning Legislation

TEXAS PLANNING, ZONING, HOUSING, PARK, AND AIRPORT LAWS.—*Municipal Studies No.* 27. *Bureau of Municipal Research, University of Texas, Austin, Texas.* 1946. 91 *pp.* 50c.

Compilation of state enactments in the field of planning prepared in answer to requests of officials and interested citizens alike. The study includes legislation of a general nature but does not cover enactments only indirectly related to planning, zoning, and housing. In cases where a special law exists and there is no comparable general law, the special law is included.

## Building Codes and Fire Protection

FIRE PROTECTION THROUGH MODERN BUILDING CODES.—*By B. L. Wood. American Iron and Steel Institute,* 350 *Fifth Ave., New York* 1, *N. Y.* 1945. *Index.* 124 *pp.*

Correlation of factual data and regulatory procedure in connection with the conception and application of building code regulations. The author stresses the need of modernization of building regulations now that more technical data are available. The book is intended to assist in stimulating clearer thinking in the preparation of fire protection regulations by correlating all the pertinent scientific data.

## Fire Reports

MINUTES OF ANNUAL MEETING OF FEDERAL FIRE COUNCIL.—*Also* COMMITTEES ON FIRE HAZARDS REPORT FOR FISCAL YEAR ENDING JUNE 1945 *and* REPORT OF FIRE RECORD COMMITTEE ON BUILDING FIRES AS REPORTED BY FEDERAL AGENCIES. *Washington 25, D.C.* 1946. *Mimeo.* 52 *pp.*, 5 *pp.*, 9 *pp. resp.*

Annual report of the annual meeting of the Federal Fire Council held December 18, 1946, which includes the proposed "Instructions for the Maintenance, Inspection, and Testing of Unlined Linen Hose Installed in Federal Buildings" and "Fire Resistance and Exit Regulations for New Buildings." There are 19 tables.

## Fire Protection for Places of Outdoor Assembly

STANDARDS FOR GRANDSTANDS, TENTS, AND OTHER PLACES OF OUTDOOR ASSEMBLY. — *National Fire Protection Association, 60 Batterymarch Street, Boston* 10, *Mass.* 1946. 23 *pp.* 25c.

Results of a committee project of the National Fire Protection Association inaugurated shortly after the disastrous Hartford, Conn., circus fire in 1944. The Association, in cooperation with the Building Officials Conference of America, sponsored the committee to study the problem of regulation for outdoor assembly places and recommend protective standards of the sort which apply to halls, theatres, and other public gathering places. The findings of the committee have been approved by the sponsoring committees and submitted to the American Standards Association as an American Standard.

## Better Tansportation for Buffalo

THE THRUWAYS AND BUFFALO'S FUTURE.—*Buffalo City Planning Association, Underhill Building,* 158 *Pearl Street, Buffalo, New York.* 1946. *Unpaged.*

Pamphlet presenting the merits of an express highway for Buffalo. Such a highway is cited as an aid to rapid transit and a solution to the growing problem of traffic congestion. "Thruways" are defined and the advantages of such a highway in Buffalo are discussed. A large map of the proposed throughway is included and the initial resolution passed in February, 1946, by the association calling for such a traffic improvement is quoted in full.

## Manual for Civic Executive Secretaries

THE CIVIC EXECUTIVE SECRETARY; THE NEW PROFESSION—*By Russell H. Ewing. National Bureau of Civic Research,* 323 *Security Building,* 510 *So. Spring Street, Los Angeles, Calif.* 1946. *Bibliography.* 22 *pp.*

A study of the need for and importance of the professionally trained civic secretary who will manage the hundreds of central civic organizations which have developed in communities throughout the country. Mr. Ewing feels that such trained civic leaders are the answer to corrupt political machines and ignorant bosses. He urges college recognition of this new and growing profession and outlines qualifications, training, duties and responsibilities, and methods of work in the field.

## Administrative Ideas for the City Official

NEW HORIZONS IN PUBLIC ADMINISTRATION—*Ed. by R. C. Martin. University of Alabama Press, University, Ala.* 1946. 145 *pp.* $2.00.

This slim volume contains half a dozen essays by those who have been actively engaged in public administration before and during the war. The subjects range from legislative-administrative relations to problems of the functional and areal organization of administration and include essays on the executive in government ("the role and methods of a government executive"), the administrative organization of regional agencies, and field and staff supervisory problems. The authors include a former member of the United States Civil Service Commission, the assistant director in charge of administrative management of the Bureau of the Budget, the general manager of the Tennessee Valley Authority, and several others whose practical experience and research record indicate the value of what they have to say.

The thinking in this book is imaginative and reflective—at the very points at which the municipal official can utilize new ideas and practices in his day-to-day work. None of the essays deals specifically with problems of municipal administration or the operation of a city department. All of them, however, give useful and frequently brilliant insights into the way in which day-to-day administration can be most efficiently conducted. This is frontier reading for the busy official who is interested in improving techniques and procedures at the crucial contact-points of action.

PHILLIPS BRADLEY,
Cornell University.

## Government Management and Costs

TRENDS IN MANAGEMENT AND COSTS OF NEW YORK STATE GOVERNMENT.—*By Abbett Pulliam. Governmental Research, Inc., of New York State,* 180 *State St., Albany* 6, *N. Y.* 258 *pp. Index.*

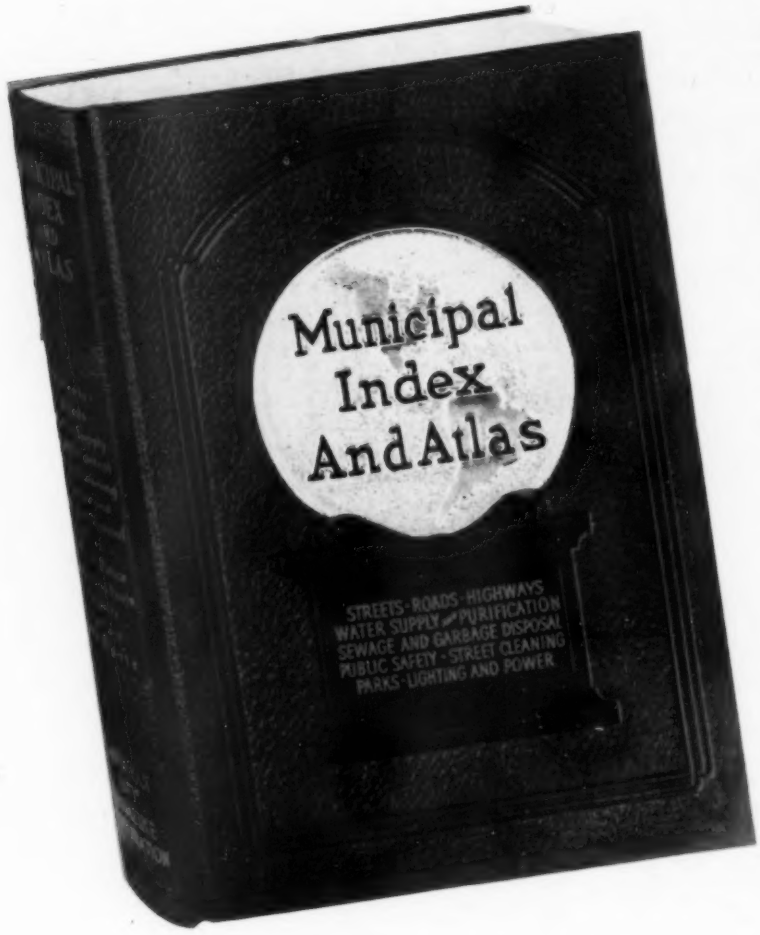
Study of problems of the governmental system of the United States, with New York State serving as a laboratory for the analysis. The results of the study might well be applied to all of the states in the country and illustrates problems of the federal government as well. The problems of expanding governmental activities are studied and with them the new services which add to administrative and political problems.

This comprehensive study covers several administrations, and traces trends which have developed consistently regardless of the party in office. Among the topics discussed are the problems of the budget, salary policy, labor and business policies, taxes, debt trend, etc.

## Patterns of Municipal Administrative Organization

TOWN ADMINISTRATIVE ORGANIZATION.—*A Summary of the Optional Alternative Provisions of the Massachusetts General Laws Relative to the Election and Appointment of Town Officers and the Combination of Offices. Massachusetts Federation of Taxpayers Associations, Inc.,* 11 *Beacon Street, Boston, Mass.* 1946. *Charts. Mimeo.* 7 *pp.*

Pamphlet designed to show the varied possibilities of changes in administrative organization which Massachusetts towns are authorized by general law to make on their own initiative. The various plans are presented in chart form and general law references for the changes suggested are included. The charts show the extent to which town business may be divided between elected boards and officials, possibilities of consolidation, public works boards and officers, and transferral of various board functions to the Board of Selectmen.




For 21 years the buying guide in 16,000 municipal offices, MUNICIPAL INDEX covers a wide range of the equipment and materials requirements of all municipal departments and offers manufacturers seeking municipal business an efficient means of making their catalog information available for immediate reference on the part of thousands of municipal purchasing officials.

# THE MUNICIPAL INDEX

470 Fourth Avenue New York 16, N. Y.

## Engineering Handbook

PRACTICAL DESIGN HANDBOOK FOR ENGINEERS.—*By Dr. Alois Cibulka. Clarke & Courts, Houston, Texas.* 1945. *Charts and Tables.* 412 *pp.* $6.00.

Impressive compilation of material on engineering design for "practical engineers." The 1945 edition of Dr. Cibulka's study is enlarged to include three publications formerly issued separately: Aerial Cable Tramways, Refinery Piping, and Modern Welded Steel Structures "RST."

This technical handbook is presented in ten parts, each complete with charts, tables, graphs, and illustrations of the material covered. The book crowds 2,000 pages of material which made up the author's lectures to his advanced courses of Industrial Engineering into little over 400. The data should be of interest and value to all engineers.

## Leisure Time Needs

OFF-THE-JOB-LIVING.—*By G. Ott Romney. A. S. Barnes and Company, Publishers, New York, N. Y.* 1945. 232 *pp.* $2.75.

An interesting study of the importance of recreation in everyone's life. The author argues that it is the obligation of society to recognize the need for recreation and to provide public recreation just as it provides public education, safety, health and sanitation.

Mr. Romney, who is a national authority in the field of recreation, stresses the value to be derived by each individual in educating his tastes to find recreation that will vitalize his interests, improve his skills, and enrich his leisure time. The advice given is worthwhile and it makes interesting reading.

## Recreation Congress

PROCEEDINGS: RECREATION CONGRESS.—*National Recreation Association,* 315 *Fourth Ave., New York* 10, *N. Y.* 1946. 176 *pp.*

Proceedings of the twenty-eighth National Recreation Congress in session from January 28 to February 1, 1946. The booklet reviews the first meeting of the body since 1942 and takes advantage of the opportunity to evaluate the wartime experiences and problems presented by the delegates. In addition to a discussion of war programs, the delegates studied the implications of a world-wide recreation program on post-war community life and made careful plans to meet the many needs presented.

## Community Centers in Canada

COMMUNITY CENTERS.—*By John P. Kidd. The Canadian Council of Education for Citizenship,* 166 *Marlborough Ave., Ottawa, Canada.* 1946. *Illus.* 115 *pp.* 50c.

Helpful booklet which outlines the development of a prospective community center, discusses various kinds of centers, and lists valuable resources for those already established. The author analyses the needs and purpose of the center and deals with problems of planning, building, financing and operation. The importance of a neighborhood gathering place where everyone can join in planning and enjoying social and educational activities is stressed and a complete list of suggested activities for all ages and interests is included. The booklet is interestingly illustrated with plans and pictures.

## Master Plan for Cincinnati

THE MASTER PLAN: REPORT ON PROGRAM AND PROGRESS.—*Cincinnati Planning Commission, Cincinnati, Ohio. March* 1946. 40 *pp.*

Report to the citizens of Cincinnati on the objectives and progress of the Cincinnati Master Plan. The booklet is presented in two sections: Part One deals with the meaning of a master plan, the goal of the planners, and the techniques and methods followed. Part Two contains a detailed report of the studies completed for the master plan and includes: the economic, social and physical conditions and potentials; plans for development of the area; control measures; and the steps necessary for carrying out the plan.

## References on Express Highways

EXPRESS HIGHWAYS IN THE UNITED STATES.—*A Bibliography. Public Roads Administration, Washington, D. C.* 1945. 27 *pp.*

Listing of significant material available on phases of express highway development in the United States during the last fifteen years. The bibliography is divided into seven sections which include economic aspects, existing expressways, legal aspects, roadside control, and toll superhighways. References are arranged by year, with most recent material first. The references should be of interest and value to highway planners and administrators.

## Los Angeles Reports

YOUR CITY IN WAR WORK AND PEACE PLANS.—*Los Angeles Year Book*—1945. *Illus.* 116 *pp.*

Comprehensive report of Los Angeles' part in war work and its post-war plans. The study covers the period from 1941-1945 and urges the continued support of Los Angeles citizens in meeting the problems of the post-war period. The sections devoted to the many city departments and services review wartime activities, current statistics, and projects or needs to be dealt with in the future. The booklet is well illustrated and effectively presented.

RECREATION — *Playground and Recreation Commission, Los Angeles, Calif.* 1946. *Illus. Unpaged.*

Master plan for the development of municipal recreation in Los Angeles. The plan would almost double the size of the present recreation system with the addition of new facilities and the improvement of existing equipment. Projects include neighborhood playgrounds, district recreation centers and swimming pools, camps, beach developments, and many improvement projects for playgrounds and camps.

A DECENT HOME: AN AMERICAN RIGHT.—*Fifth, Sixth, and Seventh Consolidated Report of the Housing Authority of Los Angeles, Los Angeles, Calif.* 1945. *Illus.* 72 *pp.*

Forceful report on the housing crisis in Los Angeles, progress made, and the problems still to be met. The report is interestingly illustrated with scenes of slums, blighted areas, and the contrast of public housing accomplishments. Charts and graphs are put to good use to point out the dangerous effects of bad housing in terms of health, crime, group tensions, and delinquency. The report outlines the action taken during the war to house defense workers and begin the attack on the slums and describes the plans and projects for the post-war period which the Housing Authority has drawn up. The need for continued public support and interest is stressed and the work of the housing authority is discussed at length.

F.O.B. LOS ANGELES.—*Department of Water and Power, Los Angeles, Calif. March* 1946. *Illus.* 40 *pp.*

Booklet published by the city-owned Department of Water and Power to interest the business men of the Middle West in the industrial advantages of the city. The book is attractively presented and is well illustrated with pictures and maps pointing out little known facts about the industrial and economic leadership of Los Angeles. Transportation facilities, water supply, raw material, power supply, and agriculture, are all topics reviewed for the prospective manufacturer.

## Catalog of Exhibits

CIRCULATING EXHIBITIONS—1946-1947. *Museum of Modern Art,* 11 *West* 53*rd Street, New York, N. Y. Illus.* 48 *pp.*

Annual listing of exhibits available on loan to libraries, museum, schools, clubs, etc. The information is arranged in four sections dealing with various types of exhibits which are available to specific groups. In each case requirements of exhibition, rental fee, space needed, and length of time for the loan are given.

## Public Utility Franchise

THE PUBLIC UTILITY FRANCHISE: ITS FUNCTIONS AND TERMS UNDER STATE REGULATION.—*By John Bauer. Public Administration Service No.* 96. *Public Administration Service,* 1313 *East* 60*th St., Chicago, Ill.* 1946. 17 *pp.* $1.00.

Study of the function of the public utility franchise based on Dr. Bauer's 1930 monograph on "Standards for Modern Public Utility Franchises." The author points out changes in conditions throughout the country since his first study which have greatly facilitated the establishment of effective municipal programs for the control and development of utilities. He stresses the part that public utilities must play in post-war planning and analyses the use of the modern franchise in establishing a comprehensive utility program to serve the fundamental needs of the communities at large.

## Effect of Industry on Municipal Credit Analyzed

VOCATION: ITS BEARING ON MUNICIPAL CREDIT IN PENNSYLVANIA.—*By Benjamin H. Shoemaker. The League of Cities of the Third Class in Pennsylvania. Room* 302. *City Hall, Harrisburg, Pa. Vol. X, No.* 2. *February* 1946. 11 *pp.*

The author has studied twenty Pennsylvania communities statistically to endeavor to discover the relationship between the credit of the municipality and the industries in it. He believes that the communities containing stable, high-paying industries and having stable, thrifty populaces have the best credit. He finds that in Pennsylvania, while diversification of industry appears to be a desirable condition, the dominance of one industry in a town, if it is a large and stable industry, leads to good municipal credit. He states that the state he has studied "furnishes a good illustration or pattern for all states since its municipalities are numerous, mature, and in excellent financial repute."

## British Architecture—Past, Present, and Future

BUILDINGS OF BRITAIN: YESTERDAY, TODAY AND TOMORROW—*British Information Services,* 30 *Rockefeller Plaza, New York City. Illus.* 84 *pp.*

Beautifully illustrated study of Britain's post-war building plans against a background of the development of architecture in England from the Middle Ages to the present day. Section one is devoted to an overall survey of the cathedral of the Middle Ages, the Renaissance transition, the seventeenth century reconstruction work of Christopher Wren, the eighteenth century and its influence on North America, and the classic revival movement of the nineteenth and twentieth centuries. Section two presents planning trends in 1939 and the probable direction of post-war building.

## Comprehensive City Plan Report

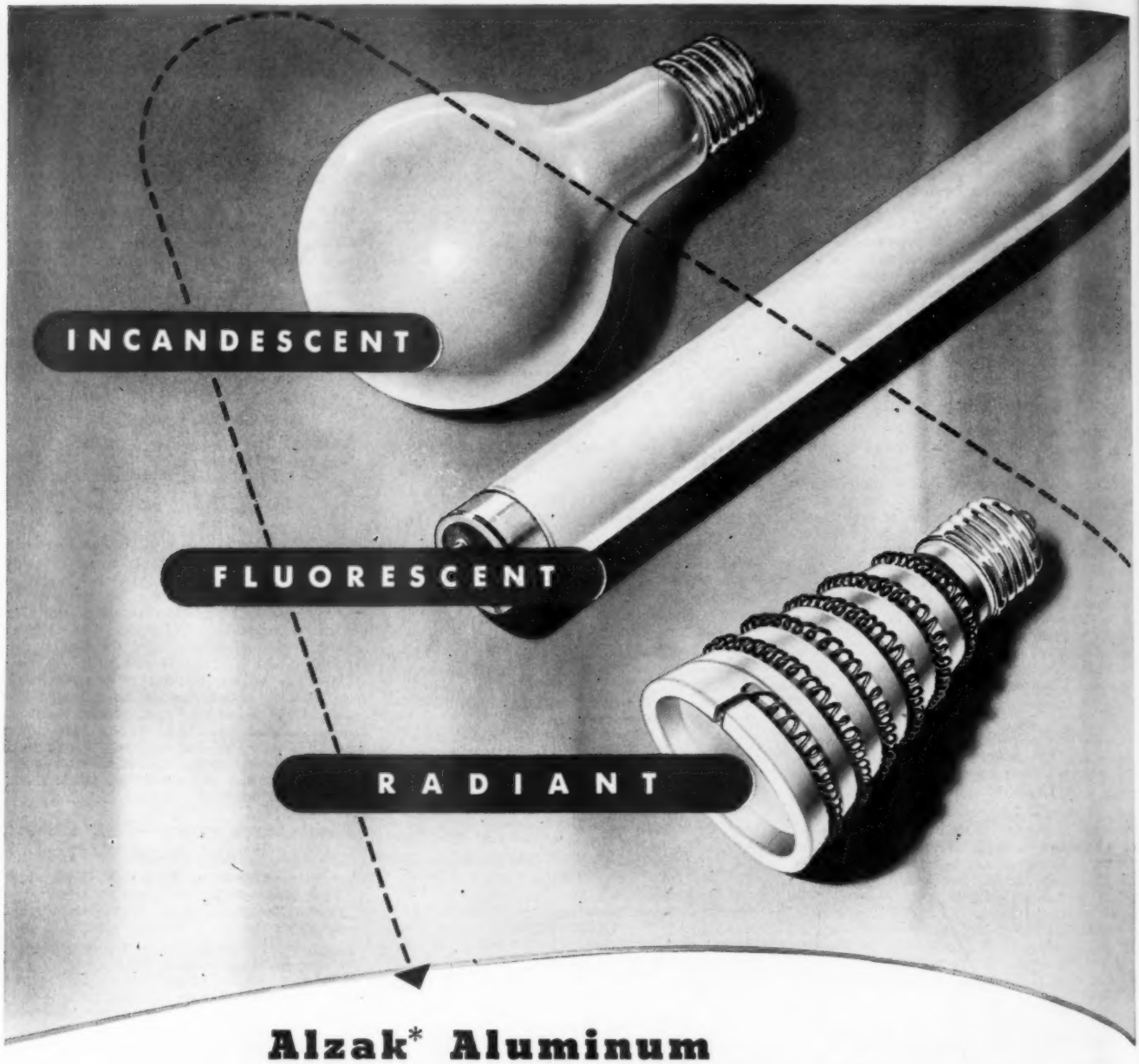
A REPORT TO THE CITIZENS OF VANCOUVER, WASHINGTON BY THE CITY PLANNING COMMISSION—1945. *Illus.* 89 *pp.*

Report by the various committees of the Vancouver City Planning Committee with emphasis on the part planning must play in the post-war period. The spiral-bound book makes much use of maps to illustrate the data presented and also includes charts and plans of the city. The study presents a general historical sketch of the area, discusses current city government, public service, business and industry, and other topics of community life.

## Brochure on Memorial Monuments

LEST WE FORGET.—*American Monument Association,* 80 *Boylston St., Boston, Mass.* 1946. *Illus. Unpaged.*

Effectively illustrated booklet presenting the monument memorial as a tribute to the war dead. The book pictures monuments erected after the last war and offers sketches of most recently designed memorials. The Association states its memorial ideal, "a monument built of enduring granite or marble, symbolic in design . . ." which will offer both tribute and inspiration.

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## Salary Increases for Police and Fire Departments

STUDY OF PROPOSED SALARY INCREASES IN THE ZANESVILLE, OHIO POLICE AND FIRE DEPARTMENT AS BASED ON THE AVERAGE COMPENSATION ADJUSTMENT FORMULA.—*Report No. 10. Prepared for the City Council by the Municipal, County Research and Taxation Committee of the Zanesville Chamber of Commerce.* 1946. *Tables. Unpaged.*

Tables presenting graded salary increases of Zanesville and the average annual compensation paid to employees of police and fire departments are compared with the salaries in nine Ohio cities of the same size. The charts give the present scale in the various communities and the compensation adjustment formulas of all nine and find that Zanesville compares favorably with the other communities cited. The proposed Zanesville adjustment formula would provide for increases of from 4.7% to 16.7% annually.

## Airport Program for Massachusetts

AIRPORT PROGRAM FOR MASSACHUSETTS BAY AND ENVIRONS.—*By Otis D. Fellows, Chief Planning Engineer. Massachusetts State Planning Board. April* 1946. *Charts, Mimeo. 39 pp.*

Preliminary report of an airport study and program for Massachusetts Bay and Environs. The report covers 100 cities and towns comprising slightly more than 50% of the population of the entire state. After presenting the background and status of current aviation facilities, the report discusses airport requirements, airport capacities, and future air traffic estimates. The text is accompanied by helpful tables and maps.

## San Francisco Public Housing

SAN FRANCISCO PUBLIC HOUSING: A CITIZENS' SURVEY.—*San Francisco Planning and Housing Association, San Francisco, Calif.* 1946. *30 pp.*

Survey of five permanent housing projects in San Francisco prepared by a special committee of individuals interested in various aspects of the question. The study points out the growing support of public housing and evaluates the results of five years of housing experience in San Francisco. The architecture of the various projects is discussed and the social agencies and recreational opportunities provided are presented. An interesting section is devoted to tenant and neighborhood reactions, and the suggestions of the people living in the projects has been carfully noted.

## Handbook for Chamber of Commerce Secretaries

THE SECRETARY AND HIS JOB.—*NACOS "Know How" No. 3. National Association of Commercial Organization Secretaries, Inc., 1615 H Street, N.W., Washington, D. C.* 1946. *27 pp.*

Third in a series of NACOS reprints of valuable instruction material on chamber of commerce management. This booklet presents a course of three lectures given by Orm Lyman in 1938. Mr. Lyman analyses the qualifications, background requirements, limitations, and advantages of the position. He reviews the various problems of management and relations with community organizations as well as the more personal questions of the secretary's financial standing and social position in the community.

## Tax Study for New York State

STATE AID AND SHARED TAXES IN NEW YORK STATE.—*Citizens Public Expenditure Survey of New York State, 100 State St., Albany 7, N. Y.* 1946. *12 pp. Appendix.*

Third annual report published by the Citizens Public Expenditure Survey of New York as a supplement to the Civic Guide Series. This year the survey is extended to include state aid as well as state collected taxes for each county. The report defines and analyses state aid, compares it with shared taxes, discusses methods of collection and use, and presents statistics for all the counties.

## Planning Report from Boston

REHABILITATION IN BOSTON.—*A Progress Report on Reconditioning, Project Costs, and Benefits to Developer, City, and Tenants. Vol. III, The Boston City Planning Board, 43 City Hall, Boston 8, Mass.* 1946. *Tables. 81 pp. Limited number for free distribution. Send 10c in stamps to cover mailing charges.*

Progress report covering activities of the Boston Planning Board since June, 1943, in continuing the rehabilitation studies begun in 1941. This report is third of a series, and deals with the possibilities of neighborhood rehabilitation by the reconditioning of existing structures, and discusses procedures and legislation to enable the city and the redeveloping agency to operate efficiently in carrying out this program. A specific tract is chosen for reconditioning and is analyzed according to past and present conditions and the proposed betterment. The procedures for such a program are outlined and an estimate of the expense of rehabilitation is presented. Tables are used extensively throughout the report.

## Other Reports Received

BELLEVUE, OHIO.—Report of City of Bellevue. 1945. Tables. 30 pp.

BUREAU OF THE CENSUS.—*City Debt in* 1944. City Finances, Vol. 2, No. 2. Washington, D. C. 1946. Charts. 59 pp.

FEDERAL HOUSING ADMINISTRATION.—*Remodeling and Modernization of Urban Dwellings,* 1942-46 by Ruth L. Mushabac. List of Periodical References. Washington, D. C. 1946. 12 pp.

GARY, IND.—Fifth Annual Report of the Sewage Treatment Works. 1945. Tables. 51 pp.

ILLINOIS LEGISLATIVE COUNCIL.—*Assessment Ratios.* Publication No. 70. Springfield, Ill. 1946. 26 pp.

*County Zoning Ordinances in Illinois.* Publication No. 74. Springfield, Ill. 1946. 21 pp.

KANSAS CITY, KANS.—Annual Report of the Board of Public Utilities. 1945. Tables. 31 pp.

LYNCHBURG, VA.—*Public Works Improvements and Municipal Construction.* General Contract, Bond and Specifications. Dept. of Public Works. 1946. Mimeo. 70 pp.

MINNEAPOLIS, MINN.—Financial Statistics of Minneapolis. 1946. Tables. 30 pp.

MINNESOTA POST-WAR COUNCIL.—*Housing in Minnesota During Reconversion.* 202 State Capitol, St. Paul, Minn. 1946. 46 pp.

NATIONAL FIRE PROTECTION ASSOCIATION.—*Electrical Committee Report to the Fiftieth Annual Meeting.* Quarterly, Part 3. 1946. Tables. 185 pp.

*Industrial Fire Brigades Training Manual.*—National Fire Protection Association, International, 60 Batterymarch St., Boston. 1946. Illus. 188 pp.

REGIONAL PLAN ASSOCIATION.—*You, Your Community, and the Regional Plan.* Regional Plan Assn., Inc., 205 East 42nd St., New York, N. Y. 1946. Unpaged.

ST. LOUIS, MO.—Annual Report. Department of Streets and Sewers. 1944-45. Charts. 109 pp.

SHELBY, N. C.—*Shelby for Pleasant Living.* Chamber of Commerce. 1946. Illus. Unpaged.

SYRACUSE, N. Y.—Annual Report of Department of Engineering. 1946. Mimeo. Appendix. 40 pp.

TORONTO, CANADA.—Annual Report of the Assessments Commissioner. 1945. Charts. 48 pp.

WASHINGTON.—*Municipal Research and Services.* Association of Washington Cities and Bureau of Public Administration, University of Washington, Seattle, Wash. 1946. 15 pp.

WINNIPEG, CANADA.—Annual Report of Hydro Electric System. 1945. Charts. 22 pp.

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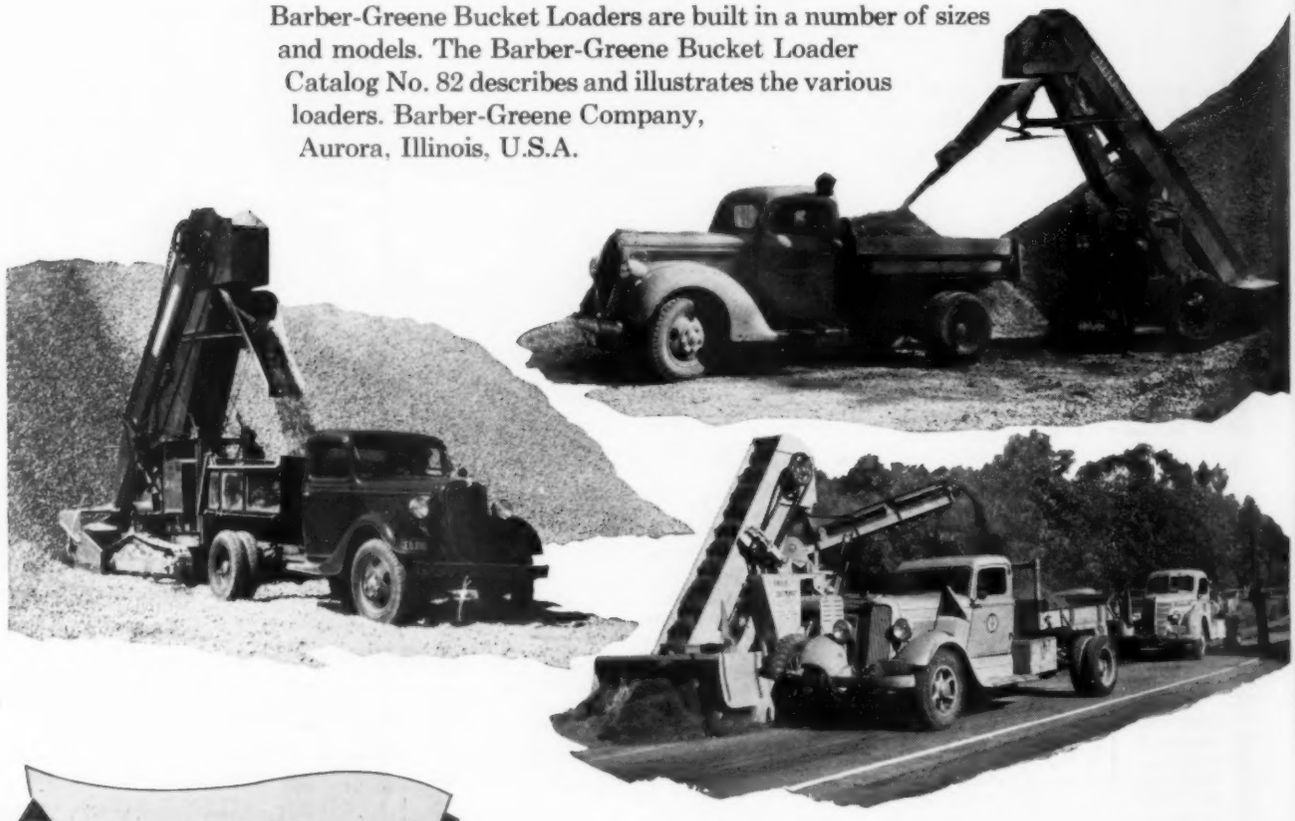
"Versatility" best describes the Barber-Greene Bucket Loader—versatility not only in materials it can handle, but in handling these materials throughout the year.

In the spring, the B-G Bucket Loader is used in conjunction with a blade grader and truck for shoulder clean-up, curve widening, contouring, etc. In the summer, it handles aggregates for asphalt patching, street graveling, etc. In the fall, as winter approaches, it is ideal for handling cinders and sand.

In the winter, when conditions are really tough, the Barber-Greene Bucket Loader can be relied upon to dig into frozen stock piles, break up the lumps, and load the distributing trucks for prompt action in meeting icy conditions.

Barber-Greene Bucket Loaders are built in a number of sizes and models. The Barber-Greene Bucket Loader Catalog No. 82 describes and illustrates the various loaders. Barber-Greene Company, Aurora, Illinois, U.S.A.



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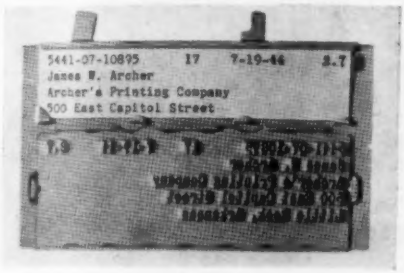
# News and Illustrations

**Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings**

## Duplicating System Saves Time for Arkansas Bureau




*Addressograph's new "E" plates are embossed to include code numbers of employes on the top line, date employer becomes liable, and the contribution rate. This is used at Arkansas State Employment Security Division for collecting employment security taxes.*

The new duplicating system used by the Arkansas State Employment Security Division for collecting employment security taxes not only increases accuracy but also has reduced the time of operation in the addressing job alone from three weeks to from six to ten hours.

This system involves the use of Addressograph "E" plates, manufactured by the Addressograph - Multigraph Corp., Cleveland, Ohio, which utilize up to six lines of information. The plates are embossed to include on the top line code numbers indicating the industry, sub-industry, county number, serial number, number of employes, date employer becomes liable, and the contribution rate. Thus, pertinent data are visible on the card section of the Addressograph frame and it is possible to deal with all employers by number instead of by name.

Complicated filing methods necessary under the old stencil system are eliminated. Because of a continued variation in rates, stencils required the purchase of three different sets of contribution reports: one to show a 1% rate, another the 2% rate, and the third to show the 2.7% rate. In addition, the quarter-ending date had to be patched in by the printer on these various forms. Having the rate on the Addressograph plate now makes it possible to include all the information in one form. Rate changes can be made by re-embossing the new rate over the old, and the quarter-ending date is imprinted in large type from the Addressograph's dater position. The single form has spot carbon on the back so that duplicate impressions can be made with one run.

When an employer becomes delinquent, the same form is addressed with a red ribbon and mailed with a printed delinquent sticker stating that the account is past due. Formerly, an additional operation on the alphabetical tabulator equipment was required. Stencils were filed by counties and by rate classification, then alphabetically within the rate; consequently, to find an employer's card, it might be necessary to look through three different groups of stencils. The system called for the imprinting of 3 x 5 cards for the Benefit Section, Field Section, and Social Security Board; two pink cards for the Bureau of Labor Statistics; and an employer poster and envelope to be sent to each new employer along with laws, rules, and other information. An "out card" for each new account also had to be made for the contribution files.

The quarterly contribution and wage reports were filed by counties, then alphabetically by rates. The operator usually started to address these reports two or three weeks in advance of the date due, and as the rates changed, he would have to stop to pull stencils already run, process a new form which would coincide with the changed rate, then go through the stocks of addressed reports to remove and destroy the original form.

There were many other time-consuming features connected with payments and delinquencies, all of which have been simplified by Addressograph.

## New Vice-President for IBM

Edward M. Douglas, executive assistant, has been promoted to the position of vice-president of the International Business Machines Corp., 590 Madison Ave., New York 22, N. Y.

A graduate of Harvard University, Mr. Douglas joined the company in 1925 as a system serviceman in New York, later transferred to Newark, N. J., and subsequently served as senior sales representative of the electric accounting machines division, as manager in Newark and in New York, as district manager in the electric accounting machines division and as IBM director of sales promotion and executive assistant.

## Five Sizes of Orange-Peel Buckets

For digging in difficult spots such as catch basins, wells, or certain types of settling basins the five sizes of Hayward orange-peel buckets show their adaptability. The smallest of these sizes will operate within a 12-inch diameter pipe. All will operate to any depth limited only by the length of the lines that controls them. The capacities of the various sizes range from 100 cubic inches to one cubic foot.

To facilitate digging where the material to be removed is particularly hard the Hayward Company has designed a bucket with a hammer weight which raises the weight of the small bucket from 35 pounds to 65 pounds, and the larger size from 200 pounds to 330. This attachment adds but little to the cost and the weight can be removed when soft material is again encountered.

The smallest bucket may be operated by hand but better results are gained when using some type of power apparatus.

Bulletin 804 published by The Hayward Company, 50 Church St., New York 7, N. Y., describes the five buckets and tells of their application.

## New Sludge Clarifier Uses Sludge Blanket Thickener

*Chain Belt's new vertical flow, slurry blanket type thickener called the Verti-Flo Thickener.*

Chain Belt Co., Milwaukee, Wis., is now manufacturing a new vertical flow, slurry blanket type of thickener known as the Rex Verti-Flo Thickener. This new unit is said to be particularly effective in delivering highly clarified effluents with relatively low detention periods when handling certain types of solids.

The Verti-Flo Thickener employs a cellular construction obtained by dividing a conventional sedimentation basin with proper weirs and baffles. Extremely long weir length is obtained with this design. The adjustable weirs allow close regulation of flow distribution among the cells.

Rex conveyor sludge collectors are installed on the tank to concentrate the sludge at the influent end of the tank and maintain a fluid sludge blanket in the zone of flow immediately below the baffles. Continuous operation of the conveyor sludge remover provides a constant recirculation of sludge to the influent end of the basin.

Existing basins may be remodeled to provide greater capacity, or better results, by using the Rex Verti-Flo principles.

For details on this thickener or on any other item in the Rex sanitation line, please write Chain Belt Co., 1600 West Bruce St., Milwaukee 4, Wis.

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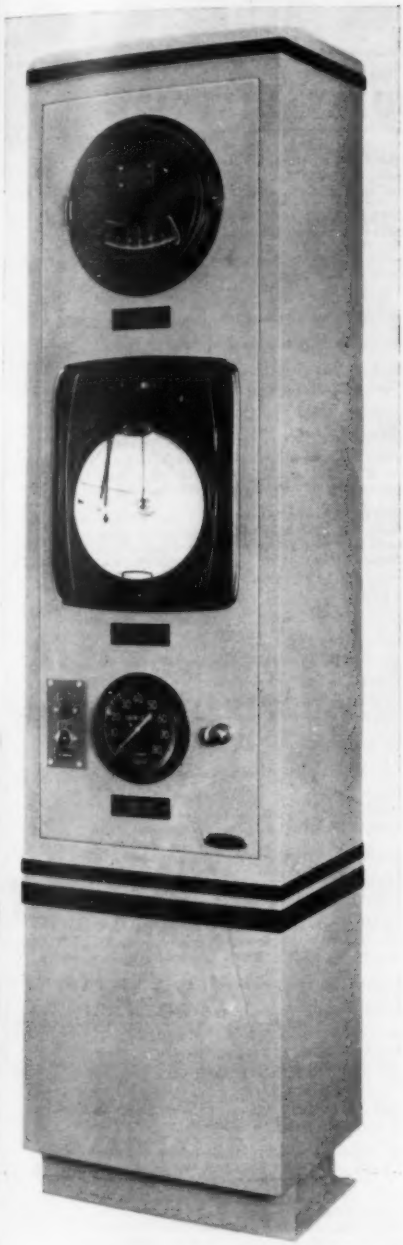
## Unified Control Cabinet Improves Water Pumping



*Here is Foxboro's new pumping control panel containng altitude controller, flow and altitude recorder and draw-down indicator.*

To give complete control over water pumping in isolated pumping stations, the Foxboro Co., Foxboro, Mass., has developed a new pumping control panel, conveniently designed, so that it can be installed even by inexperienced contractors. This cabinet was exhibited for the first time at the American Water Works Association meeting held recently in St. Louis.

The cabinet carries three instruments. One located at the top is an indicating Rotax altitude controller set to start the pump at 80 feet and stop it at 100 feet elevation (or whatever the desired high and low levels may be). Rotax altitude control operates on the change in pressure at the pump house corresponding to variations in the level in the storage tank. In many cases, control can be set to maintain a level within 12 inches of the overflow pipe in a 100-foot tank.

Below this is the master meter, usually a standard Foxboro Flow Recorder, with an extra pen for recording, in feet of water, the elevation controlled and indicated by the top instrument. This arrangement simplifies record keeping, making it necessary to stock and file only one chart. The combined record also will help prevent disputes over the elevation maintained in the tank, and can sometimes be of value to insurance inspectors and for rate studies.

The bottom instrument is the draw-down indicator, indicating the water level in the well during pumping. (In those cases where draw-down measurement is not needed, a clear well level indicator can be provided instead.) Normally an indicating instrument is satisfactory, and a hand pump is supplied in the cabinet, to force air through tubing installed in the well casing; but if desired, draw-down or clear well level can be recorded on another chart, provided a compressed air supply is available for continuous operation.

The cabinet also carries a "Manual-Off-Automatic" switch connected to across-the-line type starter as well as a circuit breaker and other auxiliary electrical equipment. A time-delay relay can be furnished for installations where surge conditions demand it.

The Foxboro Company also has other types of cabinets, suited for the larger pumping stations where pressure gages and liquid level control instruments are required. The specifications are elastic and panels can be furnished to fulfill any requirements as to space and instrumentations.

## Explains Diesel's Gain in City Power Plants

Two advantages of diesel engines over other types of power have led to their widespread use in municipally owned light and power plants. This was pointed out by Harvey T. Hill, executive director of the Diesel Engine Manufacturers Association, in a recent address in San Francisco before the Mechanical Engineering Instructors of the western third of the U. S. A.

"These advantages," Mr. Hill said, "are the diesel's operating economy and its dependability. The economy results from the fact that the diesel burns less fuel than any other type of internal combustion engine and, further, this fuel costs only a few cents a gallon."

"An active potential market for diesel engines has been building up among the 3,371 municipalities which own their own power plants," Mr. Hill said, because practically every diesel engine builder in the country had been engaged 100 percent in war work until V-J Day.

"Meantime," Mr. Hill continued, "engines in municipal plants were wearing out, in many cases at a faster-than-normal rate, due to extra demands for power for wartime production. Besides new engines that are now needed for replacement, others are required to supply additional power to meet the cities' expanding needs. The experiences of nearly 900 cities have shown that their electric load approximately doubles itself every seven years."

## LaPlant-Choate Starts New Dealer Program, Announces New Models

New sales policies were announced by the LaPlant-Choate Mfg. Co., Cedar Rapids, Iowa, in a recent statement by E. R. (Ed) Galvin, newly appointed executive vice-president and general sales manager. The company is establishing a new world-wide LaPlant-Choate dealer sales and service organization to which a number of new dealers have already been appointed.

"We have elected to take this step," Mr. Galvin stated, "because of the fact that our previous dealer organization is associated with a manufacturer now advertising equipment which is competitive to LaPlant-Choate."

All of the company's products, including hydraulic dozers and land-clearing equipment, which will continue to be available for use with Caterpillar tractors throughout 1946, will be sold and serviced exclusively by LaPlant-Choate dealers as rapidly as dealers are appointed. The announcement was made at a demonstration of the improved line of 6-, 8-, and 14-yard cable scrapers and a workout of a new high-speed, rubber-tired prime mover and 15-yard scraper combination.

## Dr. Snell Named President of Institute of Chemists

Dr. Foster Dee Snell, president of Foster D. Snell, Inc., consulting chemists and engineers, 305 Washington St., Brooklyn 1, N. Y., was elected president of the American Institute of Chemists at its recent annual meeting. He suceeds Dr. Gustave Egloff of Universal Oil Products Co., Chicago, Ill.

*Foster D. Snell*

Dr. Joseph Mattello, technical director of the Hilo Varnish Co., was elected vice-president. Also announced was the re-election of Dr. Lloyd Van Doren, patent attorney of New York as secretary; and Frederick A. Hessel, president of the Montclair Research Corp. of Montclair, N. J., as treasurer.

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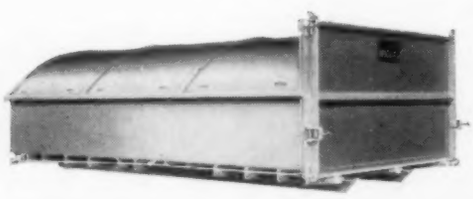
. . . then pick out the one nearest you and make a note of his name and address. Everyone of these Hercules distributors is a specialist in truck equipment engineering, ready to help you select the right type of unit for every municipal job.

Offering complete sales and service facilities, Hercules distributors offer "service after sales" that helps keep operating costs to a minimum. Let him show you the complete line of Hercules equipment—dump bodies, garbage bodies, hydraulic hoists, cretemobiles, power takeoffs—each designed to do a better job, in less time, at lower cost.

A phone call or postcard is all that's needed . . . you'll like his friendly, helpful service that makes your job easier. Call or write today . . . take advantage of the knowledge and experience that a Hercules distributor can offer you.

Hercules Model D-9 Dump Body, suitable for mounting on standard 1½ ton chassis. Exclusive Hercules design provides body strength more than 4 times greater than ordinary construction.

Hercules garbage bodies, open and closed types. Available with arched or square tailgate. Sliding doors, waterproof tailgate construction. Lengths and capacities for any requirement.



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**COLORADO**—DENVER: The Colorado Bldrs. Supply Co., 324 S. Broadway

**FLORIDA**—JACKSONVILLE: B & C Equipment Co. 1839 Main St.

**GEORGIA**—COLLEGE PARK (ATLANTA): Carley Trailer & Equipment Co. "Chapman Springs"

**IDAHO**—TWIN FALLS: V. R. Teasley, Twin Falls Equipment Co., 251 Main Ave., W.

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**INDIANA**—EVANSVILLE: Hercules Body Co., Inc. FORT WAYNE: The Branstrator Body Co., 4227 Bluffton Road. INDIANAPOLIS: John Gueldhoefer Wagon Co., Inc., Kentucky Ave. at Georgia St. (LOUISVILLE, KY.): J. Edinger & Son, 1010 Story Ave. (CINCINNATI, O.): The Bode-Finn Co., 1654 Central Ave.

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**MISSOURI**—KANSAS CITY: American Body & Equipment Co., 1411 Charlotte St. ST. LOUIS: Truck Equipment Co., 511 N. Channing Ave.

**MONTANA**—BILLINGS: Western Construction Equip. Co., P. O. Box 2117 or 505 N. 24th St. MISSOULA: Western Construction Equip. Co., P. O. Box 599 or 218 W. Pine St.(DENVER): Colorado Builders Supply Co.

**NEBRASKA**—LINCOLN: Highway Equipment & Supply Co., 21st & N Sts.

**NEW MEXICO**—ALBUQUERQUE: The Harry Cornelius Co., 1118 W. Candelaria

**NEW YORK**—BUFFALO: Truckstell-Wilcox, Inc., 224 W. Utica St. TARRYTOWN: Hercules-Campbell Body Co., Inc., WATERLOO: Hercules-Campbell Body Co.

**NORTH CAROLINA**—RALEIGH: J. B. Hunt & Sons, 323-25 W. Martin St. SPRUCE PINE: Mitchell Distributing Co.

**OHIO**—CANTON: Ewing Brothers, 929-41 Cleveland Ave., N. W. (Stark County Only). CINCINNATI: The Bode-Finn Equipment Co., 2650 Spring Grove Ave. CLEVELAND: Trailmobile Corp., 1808 E. 22nd Street. COLUMBUS: Hercules Body Sales Co., 580 Hamlet St. YOUNGSTOWN: O'Dea Truck Body Sales, 2035 Ohio Ave. (HUNTINGTON, W. VA.): Huntington Truck Equipment Co., 919 Sixth Ave. (DETROIT, MICH.): Waggy-Hoffman Equipment Co., 10012 Archdale Ave.

**OKLAHOMA**—OKLAHOMA CITY: The Diesel Power Co., 1801 N. E. Ninth St.

**OREGON**—PORTLAND: Newell Truck Equipment Co., 316 N. Russell St.

**PENNSYLVANIA**—ALTOONA: Brumbaugh Body Co., 100 Plank Road. ERIE: Trailmobile Corp. LEBANON: M. A. Brightbill Body Works, E. Cumberland St. at 7th Ave. PHILADELPHIA: Eastern Body Co., 31st & Fletcher Sts. PITTSBURGH: Hercules-Pittsburgh Body Co., 1717 Mary St., S. S., SCRANTON: Brake Service Co., Cor. Washington & Ash

**SOUTH CAROLINA**—COLUMBIA: South Carolina Eqpt. Co., P. O. Box 295

**TENNESSEE**—CHATTANOOGA: Ted Nelson Service & CHR Alignment Co., 416-18 Market St. KNOXVILLE: Knoxville Structural Steel Co., P. O. Box 1512. MEMPHIS: Dealers Truckstell Sales, Inc., 365 South Parkway W. NASHVILLE: Halliburton & Lane, 5th Ave. & McGavock St.

**TEXAS**—DALLAS: Truck Equipment Co., P. O. Box 143 or 2409-11 Commerce. HOUSTON: McArthur Welding & Press Co., 5525 Clinton Drive. SAN ANTONIO: Patten Machinery Co.

**VIRGINIA**—NORFOLK: A. S. Drumwright & Co., 1921 Brambleton Ave. RICHMOND: L. G. Crenshaw, Jr., 304 E. Main St.

**WASHINGTON**—SEATTLE: Allied Trailer & Equip. Co., 1331 Third Ave.

**WEST VIRGINIA**—BLUEFIELD: Truck Equip. Engineering Co., P. O. Box 387 or Chevrolet Bldg. CHARLESTON: West Virginia Tractor & Equip. Co., P. O. Box 473. CLARKSBURG: West Virginia Tractor & Equip. Co., 100 Wood St. HUNTINGTON: Huntington Truck Equip. Co., 919 Sixth Ave.

HERCULES STEEL PRODUCTS COMPANY . . . GALION, OHIO

## Rolph Elected President of Holophane Co.

Thomas W. Rolph has been elected president of the Holophane Co., Inc., and will be located at the company's headquarters, 342 Madison Ave., New York, N. Y. He succeeds Charles Franck who has been general manager close to thirty years and president during the last sixteen years and who will now act as chairman of the board.

*Thomas W. Rolph*

Mr. Rolph has served the organization for 25 years, first as head of the street lighting department, then as chief engineer. Several years ago he was made vice-president and placed in charge of manufacturing and engineering. A year ago he was elected to the board of directors.

A graduate of Cornell University, Mr. Rolph is a fellow of the Illuminating Engineering Society and a member of the Optical Society of America. He has been active on many I.E.S. lighting committees and has contributed numerous articles to technical publications. Some fifty United States patents on luminaires and lighting devices have been granted to him and also a considerable number of patents issued by foreign countries.

## Col. Rockwell Elected Director of United Engineering

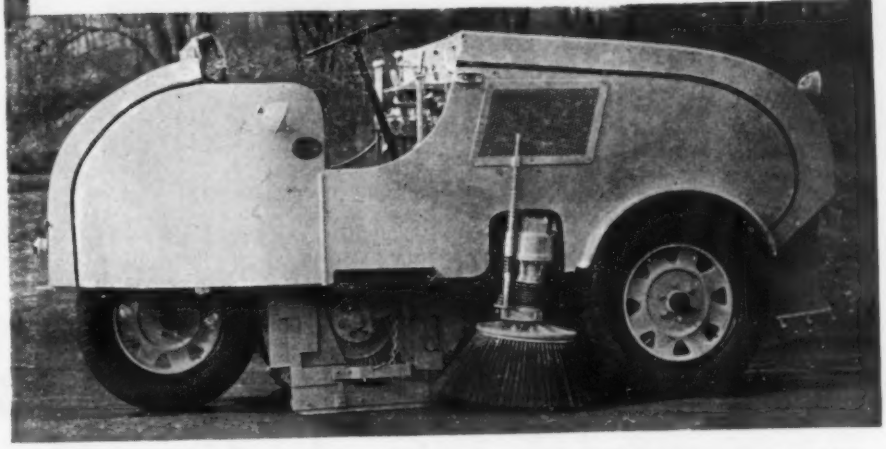
Colonel W. F. Rockwell, board chairman and president of Rockwell Manufacturing Co., Pittsburgh, Pa., has been elected to the Board of Directors of the United Engineering and Foundry Co., Pittsburgh, Pa., manufacturers of heavy-duty machinery used by the steel industry.

Colonel Rockwell has a long-standing interest in the machinery industry. Thirty years ago, when in private practice as a consulting engineer, he helped to perfect the development and practical application of many machine tools now commonly used in industry.

Colonel Rockwell has the unusual distinction of being chairman of the board of three companies listed on the New York stock exchange as well as a director of four firms listed on the Board, and by special permission he is serving as a director of two national banks.


South Bend GUTTER-SNIPE

*Pick-up Street Sweeper*



**MUNICIPAL SUPPLY COMPANY**

*Manufacturers*

*Street Sweepers*
*Street Flushers*
*Bituminous Distributors*

**SOUTH BEND 23, INDIANA**

EXPORT DEPARTMENT, 44 Whitehall Street, NEW YORK 4, N. Y., U. S. A.

★ ★

*Fresh, high quality broom fibres last longer*

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE SWEEPER STALKS

**The OTTO GERDAU CO.**

*Established 1872*

**82 Wall Street, New York 5, N. Y.**

# We have sold more cities the New MARK-TIME PERFECTION meter* since its introduction than we sold the whole 10 years prior.

CANASTOTA, N. Y. *Says:*

"We have had one hundred (100) Perfection model meters operating on our streets for the past two months and they have given excellent service. Our maintenance calls have been at a minimum and of a very slight nature.

I am glad to recommend the Rhodes Perfection parking meter at any time".

CLARK E. LAHAH
CHIEF OF POLICE

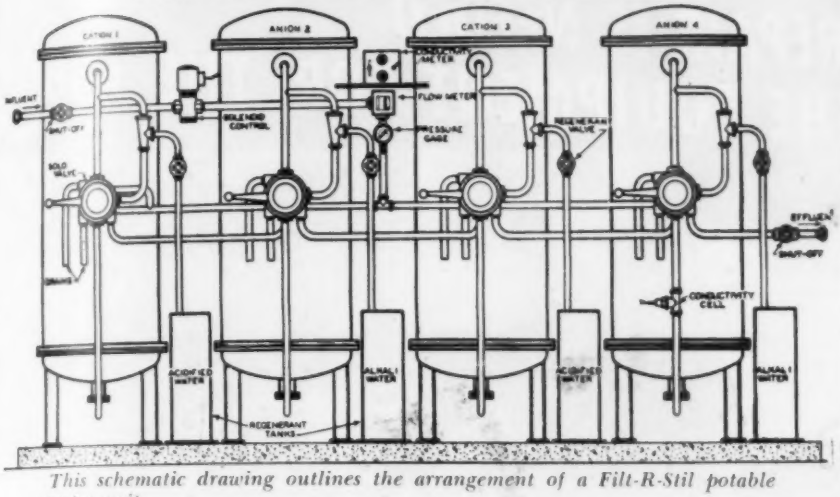
## M. H. RHODES, INC.

MANUFACTURERS — HARTFORD 6, CONN.

MARK-TIME

* Already a number of cities have given repeat orders after observing their *Perfection* parking meters in operation—one city has reordered three times.

## New Method for Making Water Potable




*This schematic drawing outlines the arrangement of a Filt-R-Stil potable water unit.*

The successful use of their new ion-exchange system of water purification for supplying, from local sources, the entire domestic water needs of a typical mining village has recently been reported by the American Cyanamid and Chemical Corp., 30 Rockefeller Plaza, New York 20, N. Y. The Filt-R-Stil unit, in operation since the first of this year, has been producing approximately 9,000 gallons of potable water in a 9-hour operating day and effects about an 85% reduction in the solids content of the water; the final water averages about 400 ppm of total solids, none of which is hardness. The water produced compares favorably in quality and taste, with that obtained from the water-conditioning plants of large cities.

The theory behind the process used in a Filt-R-Stil unit is ion-exchange. New synthetic resins have been developed which have the ability to remove or exchange ions from solution. Since the hardness and saltiness of unpotable water is caused by mineral salts and acids which, in water solution, dissociate into ions, water passed through beds of these resins can be practically completely demineralized.

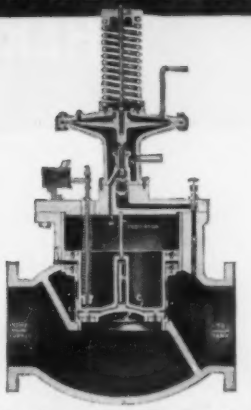
This equipment consists essentially of four columns arranged in series and containing alternate beds of catonic and anionic exchange resins. The catonic exchangers act to change salts into their corresponding acids, and the anionic exchangers remove the acids. Raw water is fed under pressure to the first column and thence through the series. The quality of the treated water is indicated by an electrical conductivity cell operating in the outlet from the last column. When the cell indicates that the delivered water is no longer satisfactory, the exchange capacity of the resins has been used up. The resins are then regenerated with dilute solutions of sulphuric acid and soda ash. They are rinsed and then are ready for reuse.

The Filt-R-Stil potable water unit, although capable of completely demineralizing water, is regulated to reduce the dissolved solids content only to a potable level, about 400 to 500 ppm.

## S. Morgan Smith Opens San Francisco Office

S. Morgan Smith Co., York, Pa., manufacturers of hydraulic turbines, valves, and pumps announces the opening of an office at 1 Montgomery St., San Francisco 4, Calif. Mr. Ross L. Mahon will be in charge.


**AUTOMATIC "STOP-STARTER" GOLDEN-ANDERSON ALTITUDE VALVES**



**Eliminate all water surges and shock**

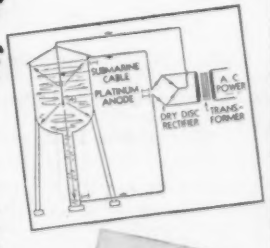
Installed where a single line is used for both supply and discharge, the valve will maintain a constant water level within 3" to 12" variation and by means of the "stop-starter" switch stops the pump as the valve closes.

Let GOLDEN-ANDERSON Engineers, Solve your Flow Control Problems!

GA GOLDEN-ANDERSON VALVE Specialty Company PITTSBURGH 22, PA

**RUSTA RESTOR *REDUCES TANK MAINTENANCE***

**Modern, Proved Cathodic Method Provides Lasting Protection Against Rusting—Eliminates Both the Loss of Service, and Cost, of Interior Painting.**




Your tanks can get lasting protection against rusting with Rusta Restor. Approved and endorsed by national and state authorities, Rusta Restor reverses the electro-chemical process that causes rusting,—keeps the tank in a "neutralized" state that prevents rusting. Inexpensive to install, and cheap to operate. Send for full details today.

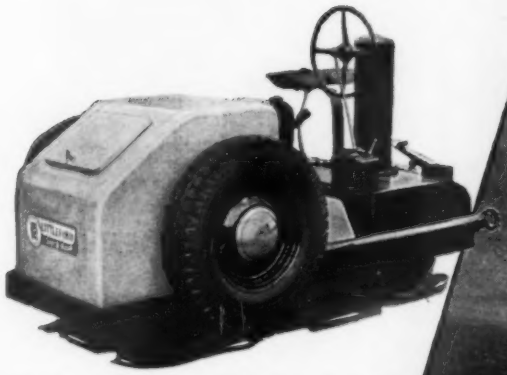
**RUSTA RESTOR**
A DIVISION OF
THE JOHNSTON & JENNINGS COMPANY
861 ADDISON ROAD • • • CLEVELAND 14, OHIO

**Ringstyle METER VALVES and COUPLINGS**

**The unique construction of these fittings for water meters permits designs with inside threads for screwing onto iron pipe, or with connections for attaching direct to copper or thin-wall lead tubing. You can learn all about RINGSTYLE Valves and Couplings by sending for our catalog, and free samples are available to any waterworks.**

**FORD Meter Box Co.,**
WABASH, INDIANA

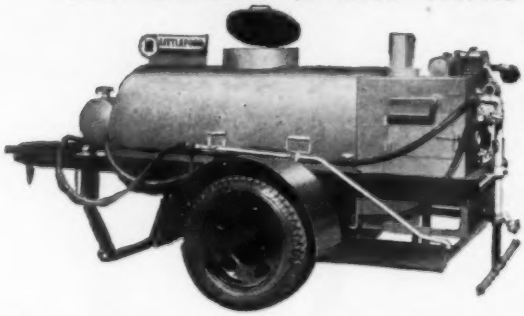
# WHEN ROAD REPAIR IS NEEDED HERE'S THE EQUIPMENT FOR THE JOB

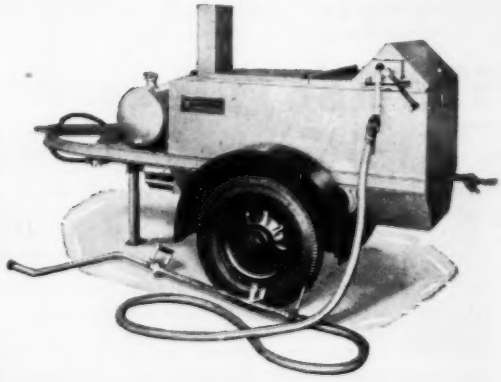


TRAIL-O-ROLLER

101 UTILITY SPRAY TANK

84-HD ASPHALT KETTLE





These Littleford Units are the modern efficient, low-cost operating units, designed for the big road-repair program ahead. The 84-HD is the fastest heating Kettle made today, having patented Littleford features—The 101 Utility Spray Tank combines thr units in one—Trail-O-Roller is the portable roller that gives as much compaction as a five-ton tandem.

With units like these on the job, it's easy to get that repair job done permanently. Littleford Equipment has been tried and tested—make no mistake when you purchase your next repair outfit—make it a Littleford.

LB — BLACK TOP ROAD MAINTENANCE EQUIPMENT — SINCE • 1900

LITTLEFORD

LITTLEFORD BROS., Inc.

500 E. PEARL ST., CINCINNATI 2, OHIO

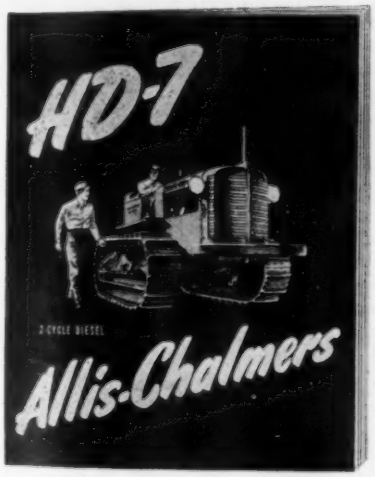
## White Promoted at Standard Steel Works

H. H. White was appointed assistant vice-president in charge of sales for Standard Steel Works, North Kansas City, Mo., at the last board of directors meeting according to a recent announcement.

*H. H. White*

Mr. White is a graduate of the University of Missouri. After leaving college, he was a salesman for the Loomis Advertising Company in the directory advertising field. In 1936 he joined the Standard Steel Works, and in 1939 was made manager of the Road and Street Division of the company. He built up a strong dealer organization for this division and in 1941 was appointed assistant sales manager. In 1943 he became General Sales Manager of the company, a position he held until his recent appointment.

## Diesel Tractor Catalog




*The cover of Allis-Chalmers' new booklet on the new HD-7 diesel tractor.*

The new HD-7 diesel tractor now being distributed by the Allis-Chalmers Mfg. Co., Tractor Division, Milwaukee 1, Wis., and its dealer organizations is the subject of a new, illustrated 24-page catalog No. 290A.

Prominently displayed in this catalog are facts about the General Motors 2-cycle engine, the unit injector, transmission construction, and the popular "positive" sealed truck wheels. Specifications list pertinent facts and figures about the HD-7, such as its 60 drawbar hp, its five speed ranges, engine dimensions, fuel capacities, shipping weights as well as track design.

## Economy Pumps, Inc. Acquires Valve Company

J. H. Swan of Klipfel Mfg. Co., Chicago, Ill., and R. H. Thomas, president of Economy Pumps, Inc., Hamilton, Ohio, have announced the purchase of the Klipfel stock by Economy. Mr. Swan remains with the company in an advisory capacity and as chairman of the board.

The Klipfel company was incorporated in 1904, succeeding Klipfel and Thomas. It is a leading producer of pressure regulators, tank thermostat valves, water level controllers, pressure relief valves, pilot operated valves for public utility and industrial plants. The line includes the majority of items required for fluid flow regulation. The pooling of the engineering, manufacturing and marketing staffs offers many advantages and economies, particularly in development and research on new products.

The Economy company was founded in Chicago in 1914. Its products include centrifugal, mixed-flow and axial flow pumps up to 120,000 gpm; planers of all sizes up to 11 feet between the housings—these large machines weighing 350,000 lbs. The company does an extensive contract manufacturing business for other machinery and engineering concerns producing machine tools of all kinds.

*after hundreds of hours*

**still fast-priming and non-leaking**

*here* . . . . . ➤

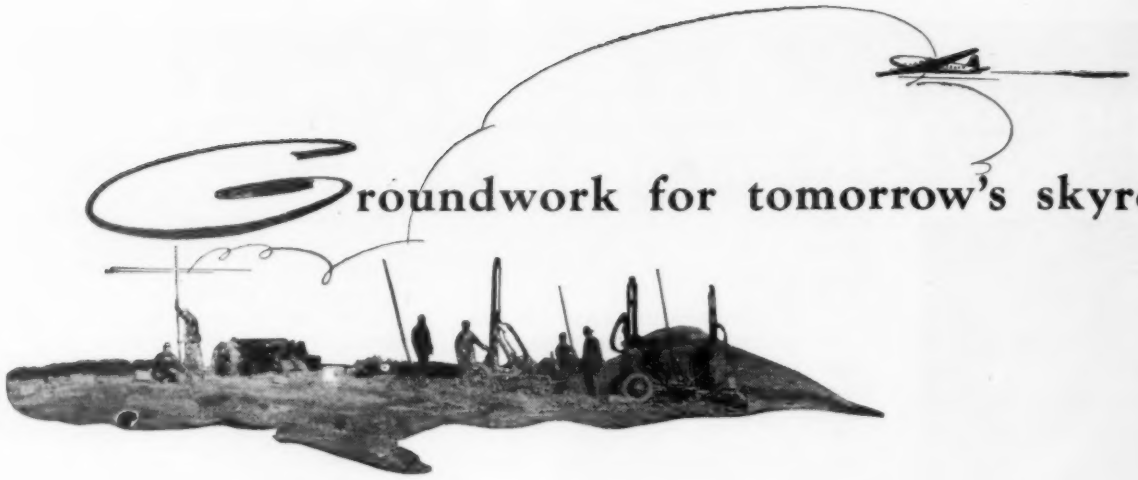
**is the reason**

The wearing surfaces of the Carver mechanical seal are made of tungsten-carbide—almost diamond-hard—and consequently are practically immune to wear.

THE SEAL that positively keeps the water in and the air out is a special Carver design that is specially suited for high pressure work and when handling dirty water—the higher the pressure the tighter the seal. Air is kept out of the pump so there's no loss of vacuum and high priming efficiency is maintained.

Carver self-priming centrifugal pumps are offered in a wide range of sizes from 1½" to 10" with either gas, Diesel or electric power. Send for Bulletin 101A. Dealers in all principal cities.

**CARVER PUMP COMPANY**
**MUSCATINE, IOWA**



# Groundwork for tomorrow's skyroads

Another huge job is just ahead for you who have built America's highways. For America is taking to the air—and that means a network of airports. You can speed up airport construction and cut cost, too—if you have Gardner-Denver construction equipment to back up your men.

Gardner-Denver equipment can help you step up the pace of construction, for it stays on the job. Endurance has been built into it to assure efficient service without frequent "time out" for maintenance. For complete information, write the Gardner-Denver Company, Quincy, Illinois.

*Gardner-Denver Gasoline or Diesel Water-cooled Compressors are completely water-jacketed for efficient, continuous operation in any climate or altitude.*

*Gardner-Denver Backfill Tamper is easy to walk over the fill—meets the most exacting requirements.*

*Gardner-Denver UM-90 Wagon Drill . . . fast, powerful and highly maneuverable.*

**A.** *Gardner-Denver S-55 Sinker—a fast, easy riding drill with remarkable hole-cleaning ability.*

**B.** *Gardner-Denver 28 Spader reduces digging time. Available with a variety of tools.*

**C.** *Gardner-Denver B-72H Paving Breakers strike powerful blows for rapid, economical demolition.*

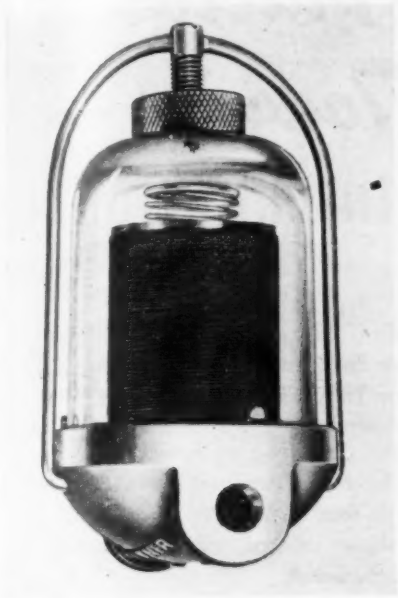
GARDNER-DENVER

*Since 1859*

gine dimensions, fuel capacities, shipping weights as well as track design.



## New Purifier Separates Free Water from Gasoline



*The Skinner gasoline and fuel oil purifier. The fluid is filtered between helically wound ribbons of an impervious material. Filtration is so uniformly fine that even free water is separated from gasoline.*

An important advance in automotive design resulting from wartime research has just been released for civilian use by Skinner Purifiers, Inc., Detroit 11, Mich. This is the Skinner gasoline purifier, a system of purification for improving the performance of cars, trucks, buses, tractors, stationary engines, and fuel oil burners. Mr. Ralph Skinner, president of Skinner Purifiers, Inc., explains the purifying action as follows:

"The Skinner Purifier purifies gasoline or other fuel by passing it between layers of helically wound ribbons made from impervious material. Dirt and other impurities are stopped at the outer edges of these ribbons and fall into the sediment chamber. Any accumulations on the outer surface of the cylinder of helically wound ribbons occurring after long use can be quickly cleaned off by simply blowing compressed air, or even the breath into the cylinder.

"The purifier actually separates free water from gasoline. This can be attributed to the unique laminated construction of the 'Kwick Klean Kartridge' with its almost innumerable orifices of a few microns in size, and the differences in surface tension and specific gravity of the two liquids."

Mr. Skinner adds that the purifier can be installed in a few minutes.

## Pennsalt Sales Representative Named

Tom R. Todd has been named divisional sales manager of the southeastern district for the Laundry and Dry Cleaning Division of the Pennsylvania Salt Manufacturing Co., 1000 Widener Bldg., Philadelphia, Pa., according to an announcement by J. Stanley Hall, manager of sales.

The Pennsylvania Salt Manufacturing Company of Washington has begun construction of a new $1,000,000 chemical plant on the Willamette River near Portland to be completed in June, 1947, it was also announced. The new plant, said Fred C. Shaneman, president of the company and vice-president of the parent company, is being built to serve the increasing activities in this part of the Pacific Northwest. It will produce liquid chlorine, liquid caustic soda, sodium chlorate, potassium chlorate, and sodium hypochlorate.

## New Personnel at Geo. H. Gibson Co.

Luis Gibson, proprietor of the Geo. H. Gibson Co., industrial advertising agency, New York, N. Y., announced recently two additions to his personnel.

Harry Bauer has been named production manager, and J. Doran Williams is art director.

Mr. Bauer recently returned after three and half years in the U. S. Coast Guard, prior to which he was employed by the Geo. H. Gibson Co. for 14 years. Except for wartime service with the marines, Mr. Williams has specialized in industrial advertising art since 1935.


# CALCIUM CHLORIDE ROADS ATTRACT TOURISTS

Secondary roads, consolidated with calcium chloride, are firm, sound, smooth and dust-free. Roadside scenery is clean. Farm homes and crops are protected.

Your local scenic spots beckon tourists away from the paved arteries. Property values are enhanced; farmers' incomes are increased.

These excellent consolidated roads are low-cost. Local materials and local labor are used. They carry heavy traffic for long periods of time.

Plan calcium consolidated roads in your Federal-Aid secondary road programs.

They earn their way.

Write for booklet, "Surface Consolidation and Maintenance."

**CALCIUM CHLORIDE ASSOCIATION**

**4145 Penobscot Building** **Detroit 26, Michigan**

**More Miles of Better Roads—**

**CALCIUM CHLORIDE**

**Consolidation**

# Busiest Tractor in Town - -

## It's an INTERNATIONAL

Digging, bulldozing, grading, shovelling, loading, lifting, carrying and hauling all day long and often into the night! That's the routine of an International Crawler Tractor when equipped with a dozer-shovel. And never time out for changing equipment!

Busiest Tractor in town because it's a time-saver, money-saver and man-saver! For a dependable, sure-footed tractor, you can't beat an International.

## 18 Reasons Why

**1.** Full-Diesel engine. **2.** Easiest starting Diesel. **3.** Replaceable cylinder sleeves. **4.** Tocco-hardened crankshaft. **5.** Full-pressure engine lubrication. **6.** Large, accessible over-center type engine clutch. **7.** Fast, easy gear shifting. **8.** Wide speed range. **9.** Big, easy-operating, multiple-disc steering clutches. **10.** Liberal use of ball bearings and bearing cages. **11.** Positive track alignment. **12.** Track shoes keyed to track links. **13.** Outstanding track roller, sprocket and idler dust seals. **14.** Track frames mounted by ball-and-socket joints on pivot shaft. **15.** Every size tractor available in two treads. **16.** Well-located mounting pads for attaching equipment. **17.** Comfortable seat and convenient controls. **18.** Individual unit accessibility—for low maintenance costs.

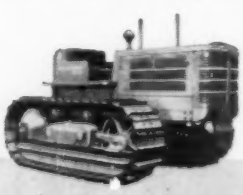
International Industrial Power Distributors, located in all principal markets, supply not only International TracTracTors, Wheel Tractors and Power Units but also tractor equipment that's matched to them and to the job. In addition, these organizations have unexcelled, factory-level service facilities for keeping International Tractors and Engines—and matched equipment—in prime working order with minimum down time.

Consult the International Industrial Power Distributor near you, now, for aid in selecting the tractors, engines and equipment you need.

*Industrial Power Division*

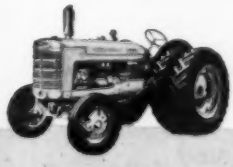
**INTERNATIONAL HARVESTER COMPANY**

180 North Michigan Avenue • Chicago 1, Illinois



TRACTRACTORS

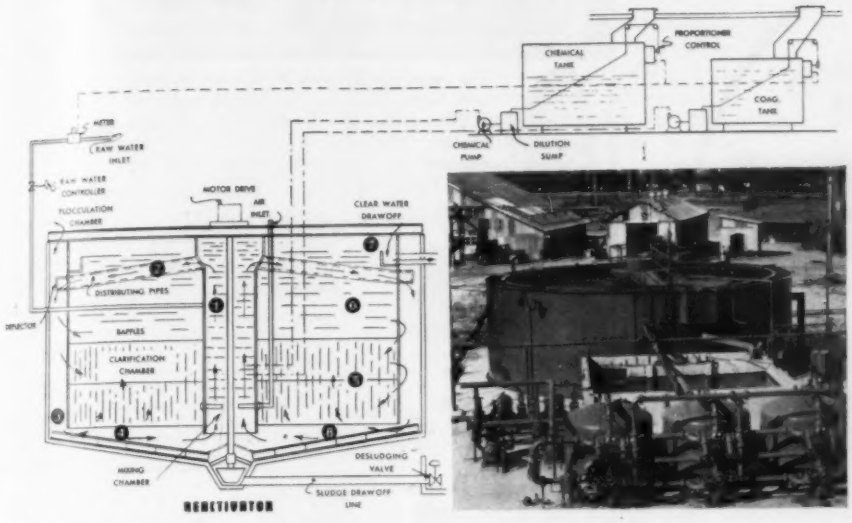
POWER UNITS



WHEEL TRACTORS

**INTERNATIONAL** Industrial Power

## New Bulletin on Sludge Blanket-Type Reactivator




*Left: A flow diagram of the new Graver reactivator using sludge blanket clarification. The numbers consecutively mark the flow through the tank. Right: This is the way a plant looks, complete with pressure filters.*

The principles and advantages of upward sludge filtration and its adaptability to the effective treatment of both industrial and municipal water supplies is the subject of an 8-page illustrated booklet from the Graver Tank & Mfg. Co., Inc., 332 South Michigan Ave., Chicago, Ill.

Charts, flow diagrams, and cutaway drawings show clearly how the Graver sludge blanket type reactivator can soften and clarify raw water, materially reduce reaction time, and provide a treated water that, in many cases, is suitable for process use without further treatment.

## De Laval Appoints Special Representative

The De Laval Steam Turbine Co., Trenton, N. J., announces the appointment of James P. Stewart as special representative for its line of centrifugal blowers and compressors. He will make his headquarters at the Trenton office.

*James P. Stewart*

Mr. Stewart for many years was connected with the Elliott Co., Jeannette, Pa., and was recently the assistant general manager of B-W Superchargers, Inc., Milwaukee, Wis.

## Veterans Return to B. F. Goodrich

Thirty-nine percent of all employes of the nationwide organization of The B. F. Goodrich Co., Akron, Ohio, who left their jobs for the armed forces were again on the company payrolls last April 30, it was reported recently.

Nearly 4,000 employes who served the nation during the war were back at posts with the organization on that date. In addition, over 4,000 former service men and women, not with the company previous to the war, were on the payrolls. New job are also filled by veterans.

**DROTT**

**Bullclam Shovel and Hi-Lift Loader *will be exhibited***

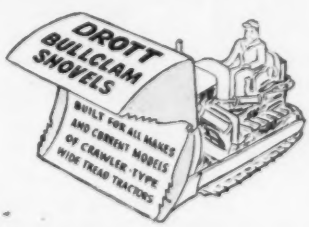
**at**

**National Institute of Governmental Purchasing conference**

August 19-21 at the
Stevens Hotel
Chicago, Illinois

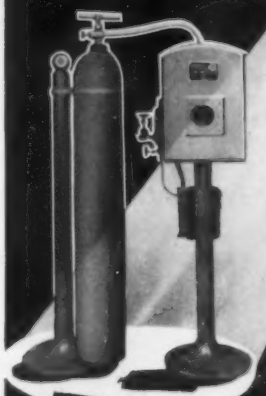
**in Booths ♯92 and ♯93**

Both units will be mounted on tractors and in operation

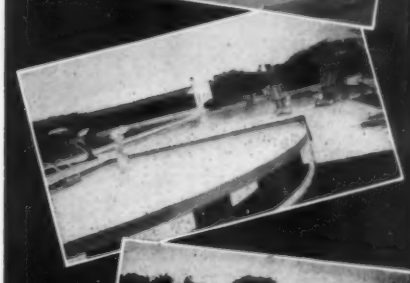



**DROTT MANUFACTURING CORP.**
**5141 No. 35th St. Milwaukee 9, Wis.**

*For* **QUALITY**
**SWIMMING POOL EQUIPMENT**
*Specify* **CHEMCO**



CHEMCO TYPE M-3



OTHER "CHEMCO" PRODUCTS
FILTERS
WATER SOFTENERS
HYDROGEN ION PLANTS
COMPLETE PURIFICATION SYSTEMS
FOR SWIMMING POOLS ETC.

**CHEMICAL EQUIPMENT CO.**
MAIN OFFICE · LABORATORY · FACTORY
323 CENTER ST. · LOS ANGELES 54 · CALIF.
MID-WEST FACTORY BRANCH
205 W. WACKER DR. · CHICAGO 6, ILL.
REPRESENTATIVES IN PRINCIPAL CITIES

# NO Skilled LABOR

*All Sizes*
*2" thru 12"*

PRECALKED! No lead to melt and pour.

PRECALKED! No slow motion. No skilled labor! No large crew just a man or two.

PRECALKED! No expensive equipment. All he needs is a calking tool and a hammer for all he does is "socket the spigot and calk"

*"Just socket the spigot and calk"*

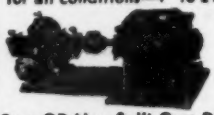
McWane Cast Iron Pipe Co.
Birmingham 2, Ala.

**McWane PRECALKED Pipe**

EXPERIENCE · SKILL · PRIDE OF PRODUCT
PUMPS *"by Aurora"*
AURORA CENTRIFUGAL • APCO TURBINE-TYPE

The able performance of our pumps, with high efficiency and lasting dependability, fulfills the fundamental purpose of our business. Put a PUMP "by Aurora" on that next liquids handling job. You'll LIKE IT, TOO!

Aurora Deep Well Turbines for all conditions—4" to 24"



Type AD Hor. Split Case, Two Stage Centrifugal

NSA Aurora Centrifugal Sump Pump

Type OD Hor. Split-Case Double Suction Single Stage Centrifugal

Type GMC Close-Coupled Centrifugal

**Apco Turbine-Type Pumps** The simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.

Type GGU Side Suction Single Stage Centrifugal

APCO Horizontal Condensation Return Unit

APCO Single Stage Turbine-Type

*Write for* **CONDENSED CATALOG M** *or See Our Catalog in* **SWEETS.**

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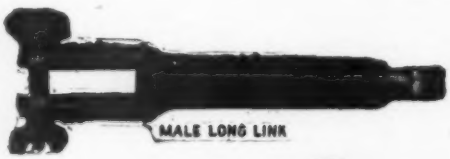
AURORA always PUMPS

AURORA PUMP COMPANY

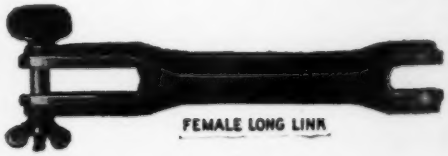
66 Loucks Street, AURORA, ILLINOIS

## ELLIS PIPE CUTTER PARTS



MALE LONG LINK

SHORT CURVED LINK



FEMALE LONG LINK

HANDLE

CUTTER WHEEL

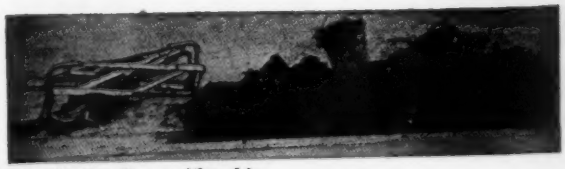
THUMB BOLT AND NUT

WHEEL PIN

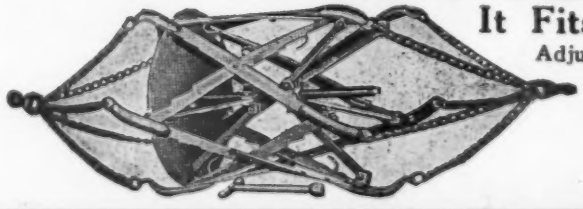
All parts interchangeable with our cutter put out for the past 40 years. Order what is needed to place your cutter in good working condition.

**ELLIS & FORD MFG. CO.** **148 South Woodward Ave., Birmingham, Mich.**

# EXPANDING ROOT CUTTER & SEWER CLEANER



Open and in action removing roots and caked sediment like this.



## It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

*Write for our new catalog on complete sewer cleaning equipment.*

**EXPANDING SEWER MACHINE COMPANY**

108 East Walnut St. Nappanee, Ind.

## New Lawn Mower Trims as It Cuts

*This Roebling 30-inch power lawn mower will cut and trim a lawn in one combined operation and will cover half an acre per hour.*

A 30-inch power lawnmower, completely new in design and principle, that will cut and trim a lawn in one combined operation and cover half an acre an hour, was demonstrated recently by its manufacturers, John A. Roebling's Sons Co., Trenton, N. J., at the Devon Horse Show, Devon, Pa.

The mower, to be known as the Roebling Rotary Power Mower, provides these outstanding features:

Rotary action which is similar to that of two electric fans placed side-by-side and face down over the grass. The horizontal blades, whirling at high speed, reach up to the very edge of posts, trees, fences, and other obstructions, almost completely eliminating "after trimming." The mower is said to be able to cut all grasses or weeds, regardless of height, and to eliminate grass-matting and over-lapping runs, as the wheels are behind and well inside the path of the cutting blades.

Styling makes the machine balanced for easy control, fingertip steering, and effortless operation. The handle can be collapsed and easily folded and the four steel cutting blades are double-edged for double duty and are readily removed, sharpened and replaced.

An automatic clutch disengages the wheel drive and the blades from the idling motor whenever the handle is released, and the motor can be started only when it is disengaged.

Heeding the recommendations of leading agronomists against excessively close mowing, the manufacturers have set the cutting heights of the blades adjustable from 1½ to 2½ inches in quarter-inch graduations. They snip the grass into fine trimmings that are evenly spread to form a desirable mulch.


**WHY—**

**The above illustration shows the position of the rubber lining in**

**Bi-Lateral Fire Hose**

**when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.**

***—Also—***

**We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction cheaper than one priced at $7,000 when loaded with other construction.**

**BI-LATERAL FIRE HOSE CO.**

**20 N. Wacker Drive, Chicago, Illinois**



The *Coagulant* that *Cuts Costs!*

TENNESSEE CORPORATION Ferri-floc FERRIC SULPHATE

Ferri-floc . . . the ferric coagulant that is successfully and economically used in sewage treatment throughout the United States. Take advantage of modern plant research and findings: use Ferri-floc.

Tennessee Corporation's technical staff will be glad to help you with your specific problems. Write to us today. The consultation service is free, of course.

*The Mark of Quality*

TC TENNESSEE CORPORATION

**Tennessee Corporation**

Atlanta, Georgia Lockland, Ohio

IDEAL FOR CITY WORK . . .

# 221 PARSONS TRENCHLINER

## PUBLIC SERVICE MODEL

The new Parsons 221 Trenchliner, public service model in the Parsons line of trenchers, sidesteps surface obstruction as close as 10" to either side of the projected trench. Boom shifts from side to side across entire width of boom carriage. Easy to shift, because it rides smoothly on big diameter rollers. Arc type spoil conveyor reaches up 6'9", easily dumps into 1½ ton trucks. Telescoping ladder type boom can dig over and under obstructing pipes in trench, virtually eliminating hand work.

**PARSONS COMPANY**
*Koehring Subsidiary*
NEWTON, IOWA

SERVICISED QUALITY PRODUCTS

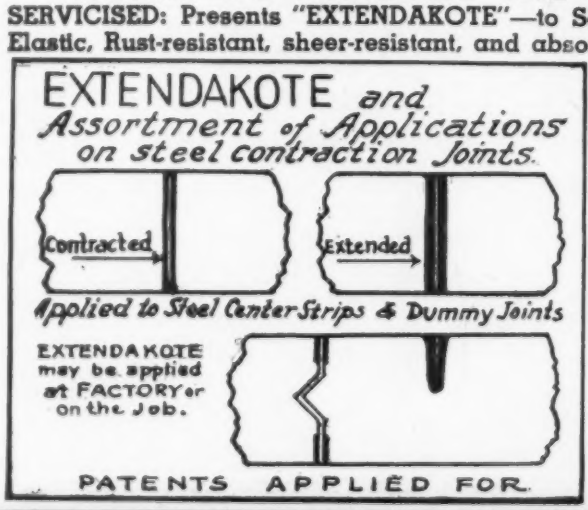
*An Elastic Waterlight Joint-Sealer*

Announcing **EXTENDAKOTE**

*Extendable and Maintains Bond at 0°F.*

## AGAIN WE INCREASE THE SCOPE of A WATERPROOF JOINT

SERVICISED: Presents "EXTENDAKOTE"—to Solve many waterproofing problems. It is Self-Sealing, Elastic, Rust-resistant, sheer-resistant, and absorbs Vibration. It is Non-Extruding in summer, does not crack in Winter. Maintains Bond in Sub-Zero weather.


EXTENDAKOTE and Assortment of Applications on steel contraction Joints.
Contracted
Extended
Applied to Steel Center Strips & Dummy Joints
EXTENDAKOTE may be applied at FACTORY or on the Job.
PATENTS APPLIED FOR.

### EXTENDAKOTE APPLICATIONS

EXTENDAKOTE as the name implies is an Elastic Coating for Steel Transverse and Contraction Joints, Steel Center Strips, Dummy Joints and Cleavage Lines. Extendakote may be applied at factory or on the Job.

SERVICISED: originators of Extendakote recommend a substantial layer or body for best Efficiency.

### WATERPROOFING

Extendakote is a process of hot-pouring or dipping and permanently seals and waterproofs when used in its proper place.

**SERVICISED PRODUCTS CORP.**
6051 West 65th Street, Chicago 38, Ill.

***Send Today for Information***

AC 7
Name
Street
City State
SERVICISED PRODUCTS CORP.
6051 WEST 65TH ST. CHICAGO 38, ILL.

## FWD Trucks Undergo Scientific Break-In Period

*An Arco driver attaches the speedometer cable of an FWD truck to the Tachograph just before leaving the factory of The Four Wheel Drive Auto Co. The Tachograph gives a constant minute by minute record of the speed traveled.*

Control of FWD trucks during the break-in period is a new service being offered by The Four Wheel Drive Auto Co., Clintonville, Wis. Exact standards of driving speed, greasing, and lubrication have been set by the service department of the company after exhaustive tests of the affect of speed, load, and other factors on the working parts of trucks during their initial driving period in order to increase the strength of the moving parts.

The manufacturing processes of the company has therefore been extended to the first five hundred or more miles of travel of FWD trucks through careful driving of the trucks from the company's factory to customers and dealers, by Arco Carriers, Inc.

Each truck is equipped with a Tachograph which is installed by the driver when the truck leaves the factory. This gives a constant, minute by minute record of the speed traveled. The driver is warned by a flashing red light when he exceeds the Tachograph speed setting.

Regular checks are made on water and oil. Universal joints are greased daily and complete oil change and lubrication is required each 500 miles. The daily reports, Tachograph discs, and final report are filed by The Four Wheel Drive Auto Company and are available for inspection by the new owner. The rigid inspection standards set by the company assure him that his truck has been scientifically broken in while en route to him.

## Stolte Elected Secretary of Fairbanks, Morse

L. W. Stolte has been elected secretary of Fairbanks, Morse & Co., Chicago, 5, Ill., to replace Fred C. Dierks who retired according to an announcement made recently by Col. Robert H. Morse, president and general manager.

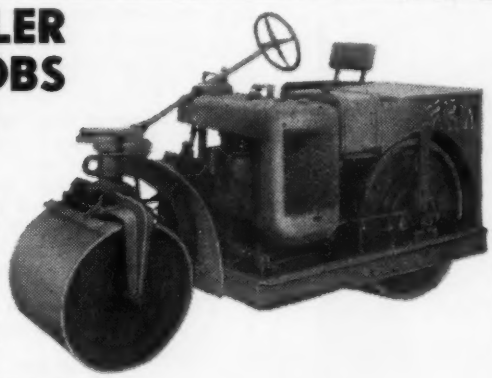
Mr. Stolte joined the organization in 1928 as a bookkeeper in the Cleveland branch. He subsequently became cashier of that branch and credit manager in 1933. Mr. Stolte has been active in credit association work, and has served as a director of the Cleveland Association of Credit Men for ten years and as an officer for three years.

In July, 1945 he was transferred to the headquarters office of the company in Chicago as general credit manager, which position he will retain along with his new job as secretary.


**A TOUGH ROLLER FOR TOUGH JOBS**

**Pierce-Bear 3½-5 Tons, Variable Weights**

Engineered for economical operation where the going is tough. Compact, easy to operate. Rear roller gives heavy duty compression. Built-in water tanks for wet rolling. Powered with Allis-Chalmers Industrial Heavy Duty Model "B" gasoline engine. Write for details.



*Manufactured by*

**LEWIS MANUFACTURING COMPANY**

415-431 Hoefgen Ave. SAN ANTONIO 6, TEXAS Phone Garfield 6137 or 8931

*Better*

**HOSE DRYING**

CIRCUL-AIR

THE AIR-CONDITIONING

**FIRE HOSE DRYER**

Chiefs and firemen prefer this modern ELECTRO-MECHANICAL DRYER because it: (1) does a better job in a fraction of the time; (2) saves most of the hard work; (3) takes up so little floor space; (4) is ideal for hose storage; (5) lessens need for large hose reserves; (6) dries clothing as well as hose.

CIRCUL-AIR is ideal for *fire stations of any size* . . . indeed many larger cities have re-ordered for additional houses after initial installations have proved it the fastest, easiest and most economical drying medium.

*Improved*

**FIRE STATION DESIGN**

In eliminating the unsightly hose tower and cumbersome rack and the "dead" space they involve your architect can plan a really attractive station of functional design. The thousands of dollars saved in construction costs could provide a lot of other needed equipment. DON'T give your modern fire dept. an old-fashioned home.

**ASK A CHIEF WHO HAS ONE**

*or Write for Descriptive Booklet*

The CIRCUL-*AIR* CORP.

575 E. Milwaukee Street

DETROIT 2 MICHIGAN

# SIGNS...
## OF GOOD GOVERNMENT

Consideration for the rights and needs of others is a requisite of good government. Streets and Highways, properly and amply marked, gain respect and cooperation from the motoring public.

The Miro-Flex line of Bonderized metal signs is most complete for city, county or state use. Embossed, Plain or Reflectorized with glass or Lucite buttons. Write for your copy of catalog today.

M-746

MANUFACTURED BY

**MIRO-FLEX COMPANY**

1824 EAST SECOND STREET · WICHITA, KANSAS

The Stewart Iron Works Company
CINCINNATI, OHIO

**TO OFFICIALS INTERESTED IN JAIL AND PRISON CONSTRUCTION**

Stewart has been building jail and prison equipment since 1886.

Our engineers will gladly give architects, builders and penal authorities the benefit of many years' experience in the jail building field. Layouts, estimates and complete information on grating and plate cells, doors, lock and locking devices, bunks, tables, seats and every accessory for new construction or the remodeling of old buildings. Stewart Non-Climbable Chain Link Wire Fence is ideal for jail yards and exercise areas.

Write today! There's no cost or obligation for plans, specifications and estimates. Address The Stewart Iron Works Co., Inc., 1321 Stewart Block, Cincinnati 1, Ohio.

Stewart

Jail and Prison Specialists Since 1886

## WANTED: TRAINED CITY ADMINISTRATORS

☆ Cities all over the country are losing some of their top administrators to the federal and state Governments and to industries. Unless there are trained replacements for these key men, city governments will be seriously crippled. If you are a department head, you owe it to your city to train an "understudy" for your job. If you are a junior administrator, now is the time to prepare for advancement.

***Enroll now in one of these eight practical correspondence courses:***

- Technique of Municipal Administration
- Municipal Finance Administration
- Municipal Police Administration
- Municipal Recreation Administration
- Municipal Personnel Administration
- Municipal Public Works Administration
- Municipal Fire Administration
- Local Planning Administration

☆ Special texts have been prepared for administrators on the job. Lesson papers are reviewed by leading authorities in each field. The $35 fee for each course covers the text, individualized lesson instruction, and a certificate upon satisfactory completion of the work. The text alone sells for $7.50 a copy—$55 for a complete set. For use in group training projects, in lots of five or more, the price is $6 a copy.

*There are now nearly 1500 public officials enrolled in these courses in nearly 300 cities in 46 states.*

WRITE FOR A SPECIAL CIRCULAR TODAY

**THE INTERNATIONAL CITY MANAGERS' ASSOCIATION**

1313 EAST 60TH STREET CHICAGO 37

## Bugs Take Notice

*Pestroy brushed onto any surfacing including garbage cans dries quickly leaving an almost invisible, non-shinny film which instantly paralyzes the lipoids of the feet of flies, mosquitoes and other insects.*

A study by the War Production Board showed that the minimum need of local governments for insecticides consisted of more than a million dollars worth of sixteen different types. Requirements run to hundreds of tons for use on municipal properties.

Brushed onto screens, porch-ceilings, floors, light fixtures, stairs, a new resin-coating, called "Pestroy" quickly dries, leaving an almost invisible, non-shiny film. According to a release from the Sherwin-Williams Co., Cleveland, Ohio, chemists say that flies, mosquitoes, fleas, ants, moths, roaches, and bed-bugs are almost instantly paralyzed as the lipoids of their feet touch the exposed crystals, yet a child can not rub off enough of the crystals to cause harm even if he sucks his fingers immediately after.

"Pestroy" comes in three different forms; liquid coating for brush application, powder for squirting into cracks and hard-to-reach places, and in concentrated form for use commercially. The latter form of "Pestroy" is available in gallon cans and contains 25% of DDT. When mixed with four gallons of water it provides a 5% solution of DDT.

## New Headquarters for Fire Hose Dryer

C. T. McGraw, President of the Circul-Air Corp., advises that in connection with the development and expansion of their business it has just completed a new building at 575 East Milwaukee St., Detroit 2, Mich., which will be its headquarters after June 15. Those interested in fire hose dryers can secure literature by writing the company at this new address.


ROADMASTER
Street Sweeper
WIRE

High Scleroscope Rating
Uniform temper.

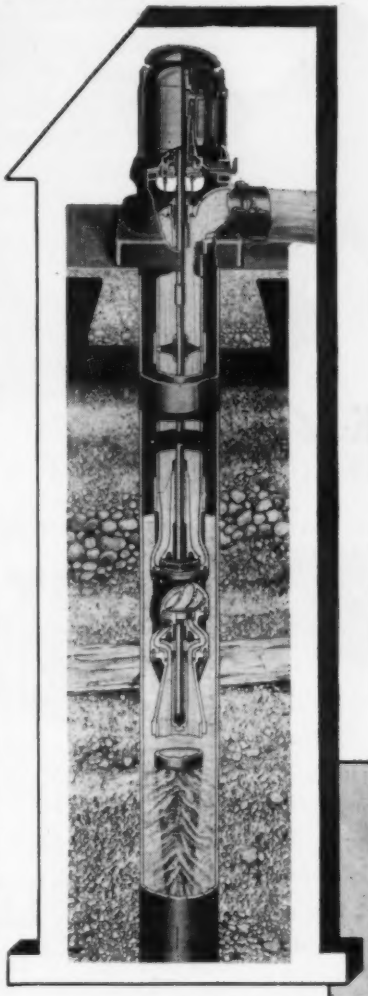
Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON
Steel & Wire Co., Inc.
Worcester 1, Massachusetts
New York Akron Chicago Detroit
Los Angeles Toronto





PEERLESS VERTICAL TURBINE PUMPS
Choice of Oil or Water Lubrication. Capacities: up to 30,000 g.p.m.

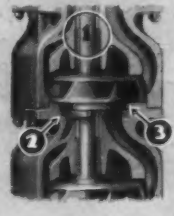
*Also Hi-Lift Pumps for producing small capacities from deep wells; the outstanding development in the decade, for water pumping.*

One more reason *why* PEERLESS IS THE WORLD'S LARGEST BUILDER OF DEEP-WELL TURBINE PUMPS

PEERLESS PUMP

ONLY PEERLESS UTILIZES THE DOUBLE BEARING AND DOUBLE SEAL BOWL CONSTRUCTION:

Double Bearings (1) one bronze and one Goodrich Cutless Fluted Rubber bearing for each pump bowl. Insures more than double life to bearings and impeller shaft. Double Seal (2) mounted below impeller neck (3), is a durable, resilient ring — automatically compensating for wear from abrasives and sand. Assures sealing efficiency.




PEERLESS PUMP DIVISION
Food Machinery Corporation
Canton 6, Ohio • Quincy, Illinois • Los Angeles 31, Calif.
Distributors in all principal cities

# KARPARK

## BRINGS STEADY PROFITABLE RETURNS

By keeping steadily at work the KARPARK Automatic Parking Meter brings in steady returns in both public satisfaction and income. Its easy, convenient, automatic operation encourages greater use. Its sturdy, accurate mechanism stands up under constant operation; keeps maintenance expense at a minimum and bolsters net income. Collecting is swift, exact and tamper-proof, thanks to its sealed and separate coin box. Bringing improved traffic control, the KARPARK not only pays for itself but steadily builds a fund that can be applied to other needed safety measures and police needs. Write for further details about all the features that make KARPARK *the Wise Choice.*

KARPARKS ARE MANUFACTURED BY THE HERSCHEDE HALL CLOCK CO.

**KARPARK** *Automatics*

KARPARK CORPORATION, CINCINNATI 6, OHIO

## KWIK-MIX BITUMINOUS NON-TILTING MIXER

**● An End Discharge mixer for applying cold or hot laid bituminous mixtures to new surfaces for re-facing and for maintenance. The wide quick acting discharge gate of the non-tilting drum reduces the time between batches. This light weight, portable unit can be quickly spotted and because of the end discharge advantage, the mixer can be conveniently pulled away from the discharged material. Equipment includes two burners which can be easily removed for controlling temperatures.**

*Write for Catalog BAC*

**KWIK-MIX COMPANY**

KOEHRING SUBSIDIARY

PORT WASHINGTON • WISCONSIN

## RUST & CORROSION

BITUMINOUS ENAMEL

We are nationally-known approved applicators of Bituminous Coatings for treating steel standpipes, elevated water tanks, water mains, penstocks, lockgates and other water works installations.

**Send for free explanatory booklet.**

**W. A. BRIGGS BITUMEN Co.**

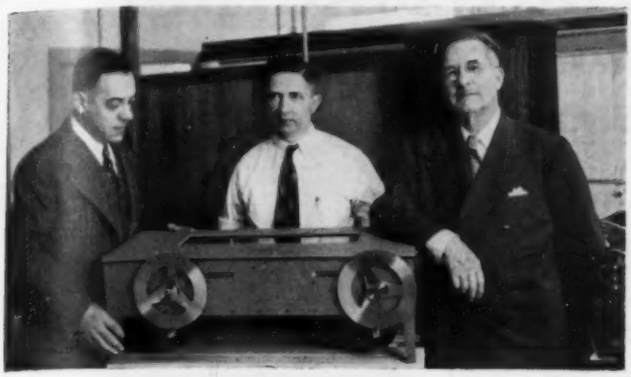
**3303 Richmond St., Philadelphia 34, Pa.**

## BUILDING INSPECTOR WANTED

To take charge of Bldg. Dept. and perform all bldg. inspections except plumbing and elec.; check all building plans except major commercial and mfg. buildings; keep building records, etc. Considerable building inspection and some construction experience required, with ability to read and interpret building plans. Engineering and some structural background desirable. Salary $285 to $350 per month depending upon qualifications. Apply to

CITY ENGINEER, Torrance, Calif.

## Leupold and Stevens Manufactures 10,000th Recorder



*The 10,000th recorder turned out by Leupold and Stevens. Left to right: Marcus Leupold, general manager; Elmer Larson, head of the recorder assembly department; and J. C. Stevens, engineering consultant and 1945 president of the American Society of Civil Engineers.*

Manufacture of its 10,000th recorder has been completed by Leupold and Stevens Instruments, Portland, Ore., according to an announcement made in May by Marcus Leupold, general manager.

The U. S. Engineers district office at Rock Island, Ill., which is using the Stevens remote registering system for recording and indicating pool and tail stages at the navigation locks and dam there, will get this instrument.

The instrument, known as the duplex recorder, type 2 PA, has two position transmitters which send stages of water to the recorder on which they are registered graphically by two pens on a strip-chart 20 inches wide. Counter-indicators provide visual indication of these two water levels.

## McHugh Products Formed to Succeed Slater Electric

An organization to be known as McHugh Products has been formed as a successor to the Slater Electric & Mfg. Co., and will manufacture "Utility" incandescent street lighting lamps.

*John J. McHugh*

John J. McHugh, a partner and director of sales of the former company has acquired full ownership and will continue to be in charge of sales. Engineering research, development and production management will continue to be under the direction of E. B. Saul.

Manufacturing facilities in the same plant at 728-736 Atlantic Ave., Brooklyn, which were enlarged and modernized to meet wartime demands will be expanded for post-war requirements.

## Householders Must Help DDT Pest Control to Work

"Community effort to control disease-carrying insects can be effective only if individual householders cooperate to the fullest extent," said Dr. Wendell H. Tisdale, manager of the Pest Control Laboratory of the E. I. duPont de Nemours and Co., Wilmington, Dela., in a statement recently in reference to the use of DDT in current outbreaks of infantile paralysis in the south.

"To make present efforts in southern states fully effective," Dr. Tisdale said, "every householder must check his own home first. Garbage pails, refuse piles, chicken coops, barns, and other possible breeding or feeding spots of flies outdoors are as important as those inside the home. There is a tendency too often to spray interior wall surfaces and window screens with DDT to the neglect of outside areas where insects continue to multiply.


**AUTOMATIC PUMP CONTROLS**

We are manufacturers, designers and specialists in the field of pump control. Send for Bulletins on any controls in which you may be interested.

**TANKTROL**—for elevated tanks, remote or nearby control by pressure. Bulletin T-11.

**DUOTROL**—for hydro-pneumatic (pressure) tanks. Control of both air and water volume. Bulletin D-6.

**FLOAT SWITCHES**—pump controls for tanks and sumps. Bulletin RO-3.

**FLOATROLS**—for open tanks and sumps. Single float, multiple circuit, sequences controls. Bulletin F-6.

**SELECTROLS**—for sewage disposal plants and water systems. Programmed multiple circuit operation. Bulletin S-7.

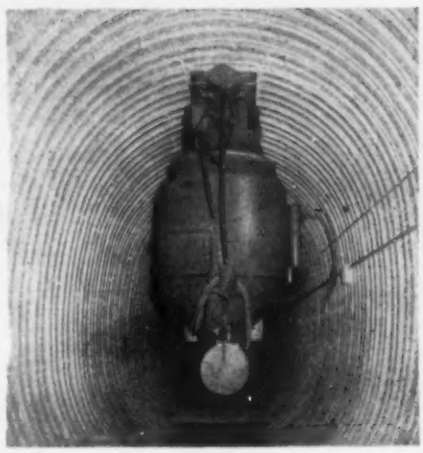
**SPECIAL CONTROLS**—for any unusual problem in water and sewage control. Write us your requirements.

AUTOMATIC CONTROL Company

1015 University Ave. St. Paul 4, Minn.



**what designed strength can mean to your tunnel liner jobs**



Rear view of weighing hopper. This elliptical batching tunnel of No. 10 gage Armco Steel is 11 by 13 feet and 460 feet long. Raw aggregates were stored over a 10-foot tunnel, 260 feet long, and wet sand over an 8-foot tunnel, 190 feet long.

This is how three aggregate tunnels built of ARMCO Corrugated Liner Plates helped speed construction of the Norfork Dam—a 1,500,000 cubic yard job.

First, the plates were easy to handle and install. Then, their designed strength permitted placing the tunnel directly beneath the aggregate pile, which attained a height of 60 feet. Delays caused by freezing in cold weather were avoided because the aggregate was handled from the bottom.

Armco's method of bolted construction made it a simple matter to locate the hoppers at any desired point. When the job was done the ARMCO Liner Plates were removed, nested together and stored in a minimum of space for future use.

There is a type and gage of Armco Plates to meet every tunnel condition. You can order exactly what you need for the job and the chances are you'll be "holing through" ahead of schedule. Write today for information on your specific needs. Armco Drainage & Metal Products, Inc., and Associated Companies, 1365 Curtis St., Middletown, O.

ARMCO

**Tunnel Liner Plates**

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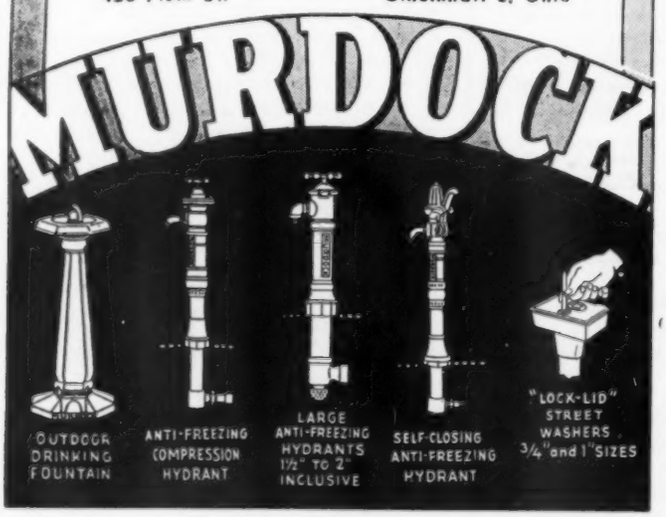
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"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

# FORD TRUCKS LAST LONGER!

**More Ford Trucks in Use Today Than Any Other Make!**

Ford

## Chairman of the Board at Mathieson Retires

Edwin M. Allen, chairman of the board of The Mathieson Alkali Works, 60 East 42nd St., New York, N. Y., retired recently according to an announcement by George W. Dolan, president. Mr. Allen, however, will continue as a director of the company.

*Edwin M. Allen*

Mr. Allen joined the Mathieson organization as president in 1919. At that time the company's plants were suffering from the strain put on them during the first World War. He devoted himself to a seven-year rebuilding program and a plan for selling chemicals directly to users, then a radical departure from the established custom of the chemical industry. He also organized traffic and technical service departments and extended the company's research and development facilities. The company's line of chemicals was constantly extended to include new products, some of them made commercially available for the first time by Mathieson research.

Elected chairman of the board of directors in 1934, he held this office and the presidency until 1944 when he retired as president but continued as chairman of the board. With his retirement this latter office is being eliminated.

## George P. Torrence Rejoins Link-Belt Co.

At a special meeting of the Board of Directors of the Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill., held recently, arrangements were made for George P. Torrence to again become associated with the Link-Belt Co., according to an announcement by William C. Carter, President.

Mr. Torrence will rejoin the organization as executive vice-president, and will become president of the company November 1, 1946 at which time Mr. Carter retires as president in accordance with the company's retirement plan.

Mr. Torrence was with Link-Belt from 1911 to 1936 when he resigned as president. Since then he has been vice-president and general manager of The Rayon Machinery Corporation, a subsidiary of The Industrial Rayon Corporation, and president of The Cleveland Pneumatic Tool Co.


# CEMENT GUN COMPANY
## "GUNITE" CONTRACTORS
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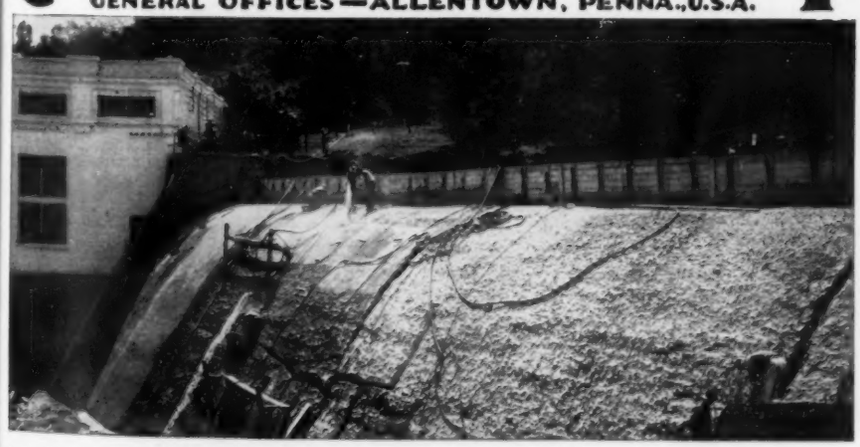

## DAM REPAIRED WITH "GUNITE"

The photograph shows the "GUNITE" restoration work in progress on the downstream face of a badly disintegrated concrete dam belonging to the Central Hudson Gas and Electric Company near Poughkeepsie, New York.

Note the freshly chipped portion in the foreground, the "GUNITE" being applied and the completed "GUNITE" work in the background. Drainage channels were provided behind the "GUNITE" to lead seepage to the toe and thus prevent subsequent frost damage to the new "GUNITE" coating. We did this work in 1942.

*Write for your free copy of our 72-page illustrated general bulletin D2300.*

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***Also manufacturers of float valves, pressure-reducing valves, relief valves and back pressure valves.***

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**ALTITUDE VALVES** for
Control of elevation and heads into and out of tanks, basins and reservoirs.
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**COMBINATION VALVE**
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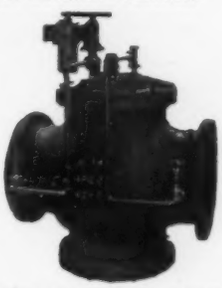

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Electric remote control—solenoid or motor can be furnished.
Adapted for use as primary or secondary control on any of the hydraulically controlled or operated valves.

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*without any digging . . .*

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*The original leak locator of the Geophone type*

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Leaks are too costly to be ignored. A pin-point size leak wastes 65,000 gallons of water annually!

A GEOPHONE saves the cost of locating leaks — saves the costs of surveys, excavating, replacing. A big paying investment for water, sewerage and Public Works Departments; for any plant with underground water or steam pipes.

Outfit complete with two GEOPHONES, connecting tubes, earphones, in heavy leather carrying case with shoulder straps. **..$75**

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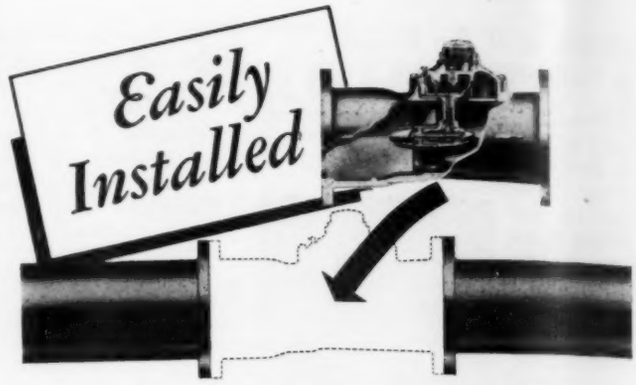


# BUILDERS *Propeloflo* METER

Builders Propeloflo Meter is a simple, self-contained totalizing meter that bolts into the line as easily as a short length of pipe. Direct reading in gallons . . . it requires no other instruments or electricity. These features, plus the accuracy and low head loss of streamline Venturi design, make Builders Propeloflo Meter ideal for metering main lines from 2" to 36".

For Bulletin 350A, address Builders-Providence, Inc., (Division of Builders Iron Foundry), 18 Codding Street, Providence 1, R. I.

BUILDERS BUILDERS PROVIDENCE *Instruments*



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## STORAGE BATTERIES

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**The Hand Laboratory, Nyack, N. Y.**

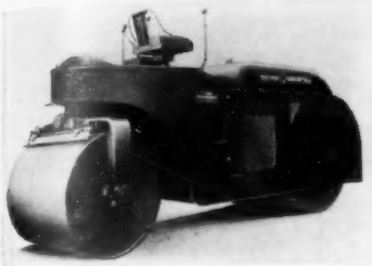
**FRONT END LOADERS**
**for Industrial Tractors**

Elkhart White Mfg. Co. Indiana

**BACK THEM . . . BUY BONDS**

Mark well this button. It is worn by the men and women honorably discharged from the armed services. Though they are now in civilian clothes, let's not forget their service to our country and us. They still rate our every consideration.

## New Line of Tandem Rollers



*Buffalo-Springfield's new line of tandem rollers come in sizes of 5-8 tons, 6-9 tons, 8-12 tons, and 10-14 tons.*

Buffalo - Springfield Roller Co., Springfield, Ohio, has announced a new line of streamlined tandem rollers, incorporating many new mechanical improvements, to supplement the new 10 and 12-ton 3-wheel rollers and 3-4-ton tandem announced earlier in the year.

The new models are produced in sizes of 5-8 tons, 6-9 tons, 8-12 tons, and 10-14 tons and can be powered with either gasoline or diesel engines.

Many of the basic principles used on previous tandems are included in the new design.

In addition, a new simplified 4-speed forward and reverse transmission has been added to provide a properly stepped speed range for all types of operating conditions. Increased operator vision is provided as a result of a cutaway section of the drive roll hooding, and the sprinkler tank capacity has been considerably increased. A removable drive roll grill adds to the appearance of the roller and provides a readily accessible opening for cleaning and ventilating the drive roll as well.

## Former President of Neptune Meter Dies

John Herbert Ballantine, president of the Neptune Meter Co., 50 West 50th St., New York, N. Y., until his retirement some years ago, died at his residence at Great Neck, L. I., recently after a long illness.

*J. H. Ballentine*

Mr. Ballantine, who was seventy - nine years old, was born in Newark, N. J. He attended Newark Academy, Pingry School, and Stevens Institute and was graduated from Cornell University in 1889.

He was vice-president and treasurer of the Neptune Meter Company prior to becoming president. One of his greatest thrills was the celebration of the shipment of the millionth Neptune meter in 1913.

Mr. Ballantine is survived by two sons, a sister, a brother, four grandchildren, and five great grandchildren.

## New Firm of Consulting Engineers Formed

A new firm of consulting engineers to be known as Ward and Strand at 550 State St., Madison 3, Wis., has been formed according to an announcement by Clayton N. Ward and John A. Strand.

Mr. Ward taught at the University of Michigan for two years, at the Engineering School of the University of Wisconsin for ten years, and was employed by the engineering firm of Mead and Seastone. He was Wisconsin State Director of the Civil Works Administration, and a partner and chief engineer in the firm of Mead, Ward and Hunt.

Mr. Strand graduated from the Engineering School of the University of Wisconsin and worked with the Soil Conservation Service, Wisconsin Highway Commisison; Consoer, Townsend & Associates of Chicago; and has been with Mead, Ward and Hunt since 1336.

The new firm will engage in engineering projects involving water, diesel and steam power, water works, sewerage works; flood control; irrigation and drainage; hydraulic research and hydrological investiga ion.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EST. 1856 McDonald

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